

State of California  
California Department of Fish and Wildlife  
Initial Statement of Reasons for Regulatory Action

Amend Section 132.8  
Title 14, California Code of Regulations  
Re: Risk Assessment and Mitigation Program 2024 Revision

I. Date of Initial Statement of Reasons: March 1, 2024

II. Dates and Locations of Scheduled Public Hearing

Date: Tuesday, May 21, 2024

Location: Teleconference and Webinar

Meeting details will be made available on  
the Whale Safe Fisheries Page:

<https://wildlife.ca.gov/Conservation/Marine/Whale-Safe-Fisheries>

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulatory Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary

Unless otherwise specified, all section and subsection references in this document are to Title 14 of the California Code of Regulations (CCR). Furthermore, unless otherwise specified, “Dungeness crab fishery” (as well as “Dungeness crab vessel,” “Dungeness crab season,” etc.) refers to the California commercial Dungeness crab fishery.

This proposal modifies the Risk Assessment and Mitigation Program (RAMP) regulation based on recent implementation experience as well as feedback from various stakeholders and updated guidance from the National Marine Fisheries Service (NMFS). The California Department of Fish and Wildlife (Department) first adopted the RAMP regulation in 2020 (OAL 2020-0902-02S). RAMP is a dynamic management framework that assesses and manages marine life entanglement risk associated with the Dungeness crab fishery. The program specifically provides for management responses to reduce and mitigate entanglement risk for humpback whales, blue whales, and Pacific leatherback sea turtles (collectively “Actionable Species”).

### **BACKGROUND**

The California commercial Dungeness crab fishery is one of the most valuable commercial fisheries in California (Wild and Tasto 1983; Department MLDS). While the fishery experiences decadal cycles with large fluctuations in yield from one year to the next (Figure 1), it nevertheless remains one of the most important economic contributors for many ports in northern and central California. For the ports of Crescent City and Eureka, for instance, crab has historically been the most important species group by both revenue and number of active vessels (Harvey et al. 2022).

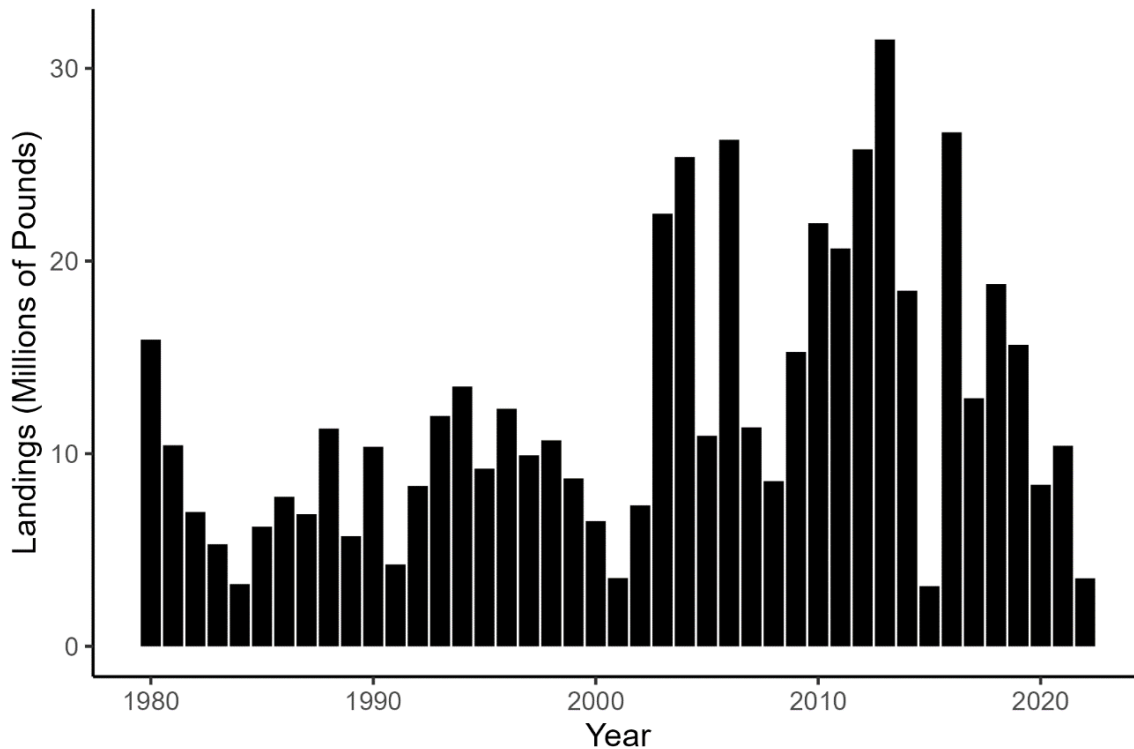


Figure 1: Dungeness crab fishery landings (millions of pounds) 1980 to 2022 (Department MLDS).

The Dungeness crab fishery relies on trap gear to catch crabs. These traps are generally constructed with two circular frames connected by spokes along the outer edges, forming a wheel-like contraption (Figure 2). The frame is wrapped with strips of rubber and the entire frame is enmeshed with stainless steel wire, weighing up to 75 lbs. A trap is always connected to at least one surface buoy by a line, usually nylon rope. Traps are usually left out in the ocean for the entire fishing season and are required to be serviced every 96 hours (weather and conditions at sea permitting). Animals such as whales can become entangled when they make contact with the lines and become weighed down by the heavy metal traps, leading to injury or death.



Figure 2. Example of a commercial crab trap (Credit: C. Juhasz).

Whale entanglement records off the U.S. West Coast are available annually dating back to 1982, with at least one large whale entanglement reported each year during this period. However, beginning in 2014, the number of entanglements increased significantly (Saez et al. 2021; Figure 3). Of these, the entanglements of humpback whales and blue whales carry particular significance because of their status as listed species under the federal Endangered Species Act (ESA; 16 USC 1531 *et seq.*). In 2014, the number of confirmed humpback whale entanglements rose to 16. This was followed by the first ever confirmed entanglement of a blue whale in 2015. In 2016, the number of humpback whale entanglements further rose to an unprecedented 48 confirmed entanglements, while the number of blue whale entanglements rose to 3 confirmed entanglements.

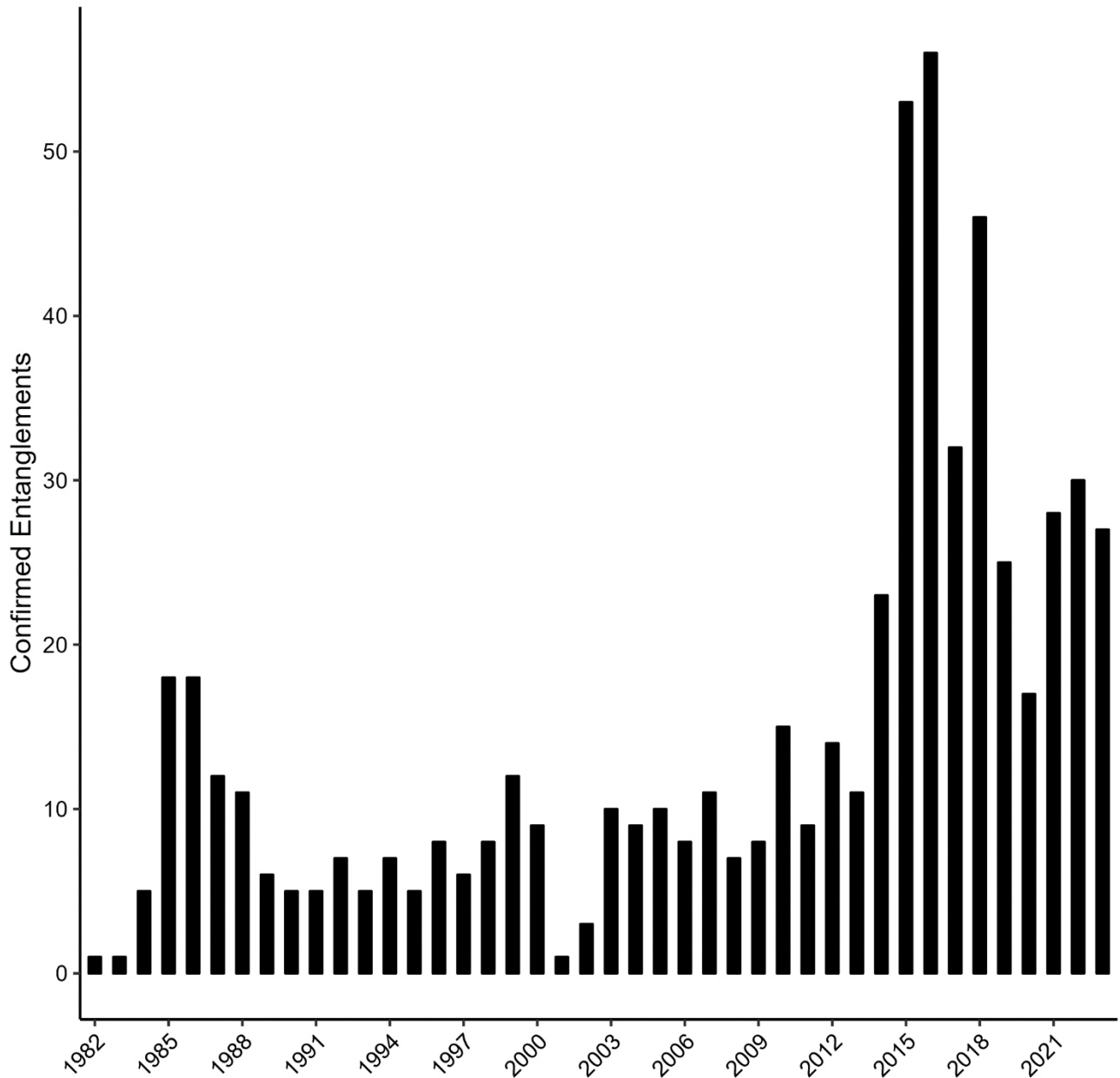


Figure 3. Confirmed large whale entanglements reported to NMFS West Coast Region, all reporting locations, species and gear types, 1982 – 2023 (NMFS West Coast Regional Office Whale Entanglement Response Database, shared January 8, 2024).

From 1982 to 2023, the Dungeness crab fishery contributed to 71 confirmed whale

entanglements, more than any other fishery on the U.S. West Coast (gillnet, which is used in several fisheries, has been responsible for 102; NMFS West Coast Regional Office Whale Entanglement Response Database, shared January 8, 2024).

Large whales are also not the only group of animals to be observed entangled in this fishery's gear. In 2016, a Pacific leatherback sea turtle, another ESA-listed species, was also confirmed entangled in commercial Dungeness crab gear near Monterey (Benson, S.R. 2019). In 2023 another leatherback sea turtle entanglement caused by Dungeness crab fishing gear was confirmed near the Farallon Islands, near San Francisco.

In the fall of 2015, the Department, the California Ocean Protection Council, and NMFS formed the California Dungeness Crab Fishing Gear Working Group (Working Group) to help develop marine life entanglement solutions. This collaborative group is comprised of representatives from the fishing community, environmental organizations, researchers, as well as state and government agencies. The group immediately began to develop a management framework to mitigate the entanglement risk, which eventually evolved into RAMP. The new framework was piloted during the 2017-18 fishing season. Shortly after, the California legislature mandated the Department to adopt the framework into regulations (SB 1309 (2018)).

Following over a year of development, the Department adopted RAMP into Title 14 as Section 132.8 in 2020. The program has since been implemented for the 2020-21, 2021-22, and 2022-23 Dungeness crab seasons, as well as the current 2023-24 season. Meanwhile, the Department has also been engaging with NMFS on improving the program as part of its application for an Incidental Take Permit (ITP) under Section 10(a)(1)(B) of the ESA. This proposal contains various amendments to Section 132.8 that reflect feedback received to date from NMFS and the public, as well as the Department's own experience implementing the program.

## **CURRENT CODE AND REGULATIONS**

Like other major fisheries in California, multiple code and regulatory sections form the management framework for the Dungeness crab fishery. These restrictions are as follows:

- Fish and Game Code (FGC) Section 8276 prescribes the open seasons for the Dungeness crab fishery, which differs between counties north of the Mendocino-Sonoma County line and those further south.
- FGC Section 8276.1 provides the Department with the authority to adopt RAMP and empowers the Director of the Department (Director) to restrict the Dungeness crab fishery under RAMP.
- FGC Section 8276.2 provides the Director with the authority to delay the Dungeness crab fishing season based on crab meat quality.
- FGC Section 8278 imposes a minimum size for Dungeness crab that can be taken.
- FGC Sections 8280.1-8280.9 establish the Dungeness crab vessel permits, their transfer mechanism, revocation procedure, renewal, and associated restrictions.
- FGC Section 9003 prescribes mandatory trap destruction devices and specifies that every trap shall have at least one destruction device to facilitate escape of species that cannot be retained.
- FGC Section 9004 limits the maximum service interval of traps to 96 hours.
- FGC Sections 9005 and 9006 mandate that every trap used to take crustaceans must

be marked with a buoy.

- FGC Section 9007 mandates that any trap used without a buoy or that is not marked in accordance with Section 9006 shall be seized.
- FGC Section 9011 specifies requirements for crab traps, including minimum requirements for circular openings and incidental species allowances.
- FGC Section 9012 prohibits connecting multiple traps with a common line in the Northern Management Area.
- 14 CCR 132.1 prescribes the rules regarding Dungeness crab trap tags, biennial buoy tags, and trap and buoy tag allocations.
- 14 CCR 132.2 prescribes the rules regarding retrieval of Dungeness crab traps by individuals other than the owners of those traps.
- 14 CCR 132.3 prescribes the rules regarding the biennial Dungeness crab trap limit permit.
- 14 CCR 132.4 stipulates the replacement procedures for lost Dungeness crab buoy tags.
- 14 CCR 132.5 provides an appeal process for the allocation of Dungeness crab trap and buoy tags.
- 14 CCR 132.6 stipulates Dungeness crab trap surface gear limitations and gear removal time.
- 14 CCR 132.7 prescribes the Lost or Abandoned Dungeness Crab Trap Gear Retrieval Program.
- 14 CCR 132.8 prescribes RAMP.

### **Director's Authority to Delay or Close Fishery Prior to RAMP**

Prior to RAMP, the Director could close or delay the fishery pursuant to two statutes. SB 1208 (1989) authorized the Director to impose fishery closure or delay when high levels of toxic substances such as domoic acid are present. Under FGC 5523, the Director may restrict the take of Dungeness crab if the Director of Environmental Health Hazard Assessment and the State Public Health Officer determine that high levels of toxic substances are present. The Director shall then remove the restriction "in a manner that promotes a fair and orderly fishery" when the health officers determine that the risk is no longer present.

AB 3337 (1994) authorized the Director to impose limited delay to the Dungeness Crab fishery based on crab quality. Under FGC 8276.2, the Director may delay the opening in the Northern Management Area (Sonoma/Mendocino County line north to the California/Oregon border) if crabs there are found to be soft-shelled or otherwise of low quality. This delay cannot extend beyond January 15th of the following calendar year.

### **RAMP**

The Department adopted the RAMP regulation on August 27, 2020 as Section 132.8, which became effective on November 1, 2020. The program divides the state's coast into 7 Fishing Zones. These Fishing Zones extend from shore to 200 nautical miles seaward with specified latitudinal boundaries. Fishing Zone 1 begins at the Oregon-California border to the north and extends south, followed by Fishing Zone 2, and so forth until Fishing Zone 6 ends at the U.S.-Mexico border to the south. Fishing Zone 7 stretches from Point Arena to the north to Point Pinos to the south, overlapping with a small portion of Fishing Zone 2, Fishing Zone 3, and half of Fishing Zone 4 (Figure 4).

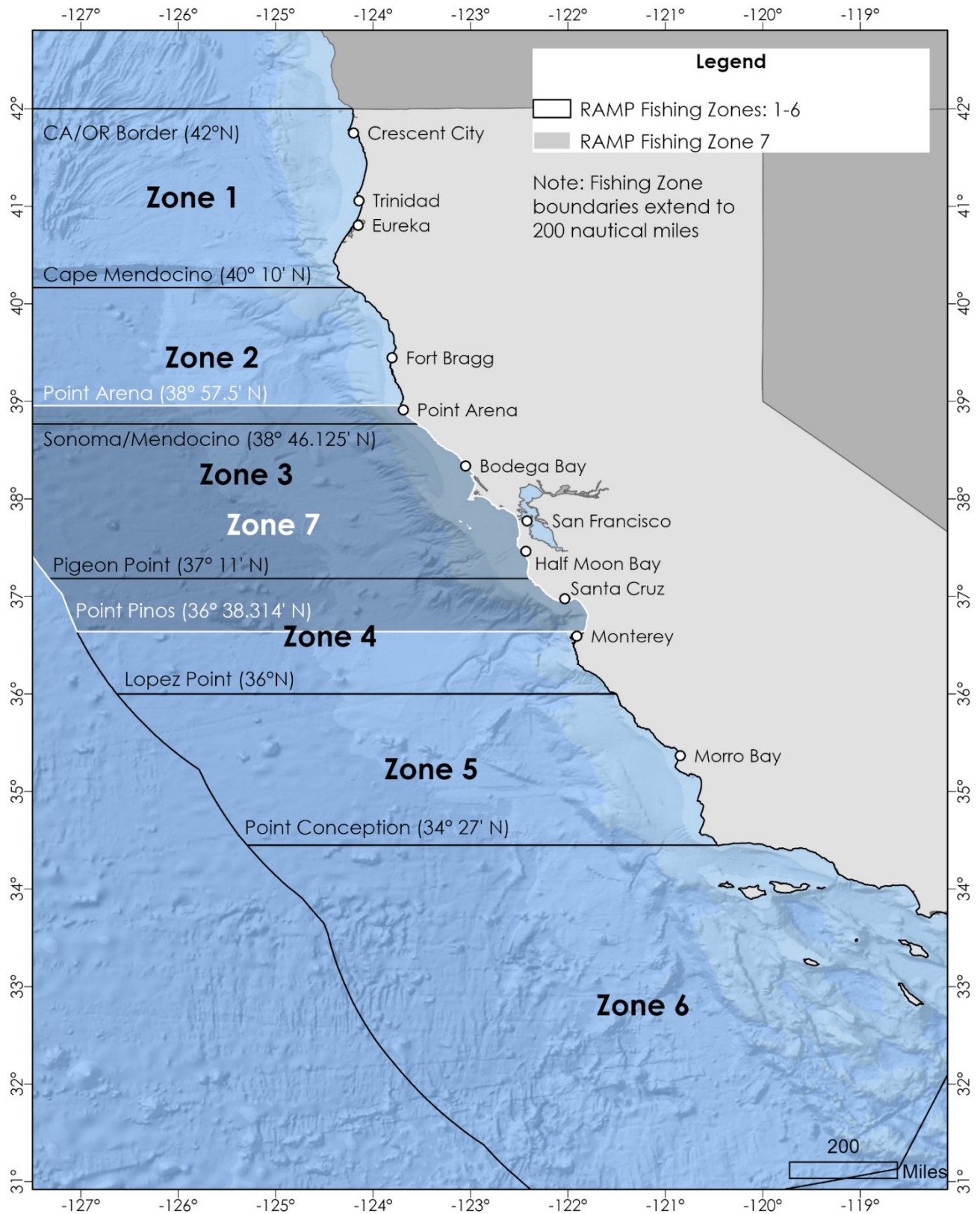


Figure 5. Current RAMP Fishing Zones and ports of interest.

Pursuant to subsection 132.8 (c), management actions may be activated by two types of triggers: confirmed entanglements of Actionable Species (Confirmed Entanglement) and the number of Actionable Species observed within a Fishing Zone (Marine Life Concentration). Under RAMP, Confirmed Entanglements are converted into a metric dubbed the Impact Score.

A confirmed blue whale or Pacific leatherback sea turtle in Dungeness crab gear translates to an Impact Score of one, while a confirmed humpback whale entanglement translates to an Impact Score of one only if the animal is confirmed as deceased; otherwise, it would be counted as an Impact Score of 0.75. A factor of 0.5 would be applied to the Impact Score if the entanglement involves a gear that cannot be attributed to a specific fishery (Unknown Fishing Gear).

When a humpback whale, blue whale, or Pacific leatherback sea turtle is confirmed as entangled in a Fishing Zone, the Director must either close that Fishing Zone or take other management action(s) that protects the Actionable Species. Furthermore, reaching an in-season statewide Impact Score of 3 for humpback whales requires the Director to close the fishing season statewide. When the average Impact Score over three rolling years (current calendar year plus the two previous calendar years) exceeds two for humpback whales, one for blue whales, or one for Pacific leatherback sea turtles, the Director must also take management action(s).

Marine Life Concentration triggers are based on the numbers of Actionable Species observed within a Fishing Zone between shore and the 100-fathom contour (an area designated as the Fishing Grounds). The trigger values depend on the time of the year. From November 1 until the start of the fishing season, management actions will be taken whenever at least 20 humpback whales, three blue whales, or a Pacific leatherback sea turtle are observed in a Fishing Zone on a single survey. Management action can also be triggered when sequential surveys indicate a running daily average of at least five humpback whales or three blue whales over a one-week (seven-day) period. If no data is available, the fishing season will be delayed in 2-week increments until December 31. From March 1 to the end of the fishing season, the management threshold for humpback whales is 10 whales, while the thresholds for the other Actionable Species remain the same as the fall period. If no data are available by March 15, the Director must also implement management action(s).

Subsection (e) prescribes five management actions that the Director may take to address marine life entanglement risk:

1. Fleet advisory
2. Depth constraint for the fishery
3. Vertical line/gear reduction
4. Fishery closure
5. Allowing use of Alternative Gear

In deciding which management action(s) to take, the Director must consider the following (subsection (d)):

1. Working Group recommendation
2. Information from NMFS
3. Effectiveness of a particular management measure
4. Economic impact on the fishing community
5. Data within and across Fishing Zones
6. Known migration pattern of the Actionable Species
7. Fishing Season dynamics
8. Known distribution and abundance of key forage species
9. Ocean conditions

## 10. Current Impact Score

## 11. Marine Life Concentrations

Subsection (f) further specifies a minimum notice requirement prior to implementing any management action regarding the take of Dungeness crab, and how notice of such actions and any changes will be disseminated.

To help the Department determine entanglement risk during the fishing season, subsection (g) instituted a bi-weekly reporting requirement for the fleet. Dungeness crab permit holders must submit a report every two weeks describing the number of traps they deploy, as well as the Fishing Zone(s) and the depth range that the traps are deployed in. In their final bi-weekly report, permit holders must also report the number of traps lost over the course of the fishing season. The section also required all Dungeness crab fishing vessels to carry active electronic monitoring devices starting with the 2023-24 fishing season.

Finally, subsection (h) establishes the authorization process for Alternative Gear; i.e., innovative gear types that are anticipated to reduce the risk or severity of entanglements compared to traditional fishing methods. Interested parties must submit written requests for authorization which describes how the gear operates, research trial results, and how the proposed gear meets the following criteria: detectability, retrievability, ability to identify, benefit (i.e., how the gear reduces risk or severity of marine life entanglements), and enforceability. Once authorized, Dungeness crab permit holders can use Alternative Gear during a RAMP closure after April 1, thereby providing additional fishing opportunity in the spring.

In 2023, the California legislature further empowered the Director to authorize the use of Alternative Gear. Under the amended FGC Section 8276.1, Alternative Gear that “may otherwise be prohibited” may be used “as prescribed by the [D]epartment.” For example, multi-trap “trawls” connected by a common ground line could be authorized as Alternative Gear, which is otherwise prohibited under FGC Section 9012.

### **PROPOSED REGULATIONS**

The proposed amendments are based on the Department’s experience implementing Section 132.8 as well as feedback from stakeholders, and guidance from NMFS. This proposal contains the following substantive changes:

1. Definition and calculation for Confirmed Entanglement:
  - a. Clarify that an Actionable Species entanglement involving California commercial Dungeness crab gear observed anywhere will be considered as a Confirmed Entanglement (subsection (a))
  - b. Clarify that an Actionable Species entanglement in Unknown Fishing Gear will count as a Confirmed Entanglement only if it is reported from a Fishing Zone off California (subsection (a))
  - c. Clarify that Confirmed Entanglements will be assigned based on information provided by the NMFS, and will be made when sufficient data are available, but no longer than on a quarterly basis (subsection (a))
  - d. Remove provision pertaining to Confirmed Entanglements involving multiple fisheries (subsection (a))



- e. Simplify Confirmed Entanglement's calculation by repealing the concept of Impact Score (subsections (a) & (c))
- f. An unidentifiable gear will be considered as Unknown Fishing Gear unless the gear in question is entirely inconsistent with a Dungeness crab trap (subsection (a))
- g. Phase out assignment of Confirmed Entanglements in Unknown Fishing Gear to the Dungeness crab fishery based on a new line marking requirement (subsection (c) & (h))

2. Management areas under RAMP:

- a. Specify that Fishing Zones extend to all "Ocean Waters" within the specified area (subsection (a))
- b. Remove the concept of "Fishing Grounds" and apply the 100-fathom boundary to only the Marine Life Concentration surveys (subsections (a), (c), and (d))
- c. Defines "Ocean Waters" (subsection (a))
- d. Remove Fishing Zones 6 & 7 (subsection (a))

3. Management Actions:

- a. Move the start time of risk assessments from November 1 to October 15 and discontinue assessment once a Fishing Zone has been closed for the rest of the season (subsection (b))
- b. Clarify that a management action will remain in effect until it is revoked (subsection (b))
- c. If a Fishing Zone is closed for the season, only approved Alternative Gear can be used in that zone for the rest of the season (subsections (b) & (e))
- d. Institute revised Confirmed Entanglement thresholds to align with ESA and anticipated requirements under an ITP (subsection (c))
- e. The validity of a survey for risk assessment no longer expires after a specified period of time (subsection (c))
- f. Elevate a management action's effectiveness at minimizing entanglement to its primary goal (subsection (d))
- g. Consolidate the spatial data on the Actionable Species under one subsection and explicitly allow the consideration of data in areas adjacent to Fishing Zones (subsection (d))
- h. Extend consideration of entanglement pattern from only the ongoing calendar year and Fishing Season to prior years and seasons as well while crafting management actions (subsection (d))
- i. Remove Fleet Advisory as a management action (subsection (e))
- j. Add restrictions to the amount of surface gear and mandatory active tending of crab gear as a possible management actions (subsection (e))

- k. Update fishery closure requirements by clarifying that all fishing gear must be removed from a closed Fishing Zone by the effective date of the fishery closure; crabs from delayed or closed zones cannot be taken, possessed, sold, or landed, with special stipulations for crabs taken from these zone(s) right before closure (subsection (e))

#### 4. Reporting

- a. Further clarify that all Dungeness crab permit holders, whether they are using traditional or Alternative Gear, must submit the biweekly report when they have gear in any Fishing Zone(s); reports are due on the first and sixteenth of each month, and may be submitted through a Department provided form in addition to email or text (subsection (g))
- b. Biweekly report now includes the due dates and number of newly lost traps known to each permit holders (subsection (g))
- c. Requiring an end-of-season report due two weeks following the submission of each permit holder's last biweekly report of a Fishing Season documenting the traps lost during that season and their associated buoy tags (subsection (g))
- d. Update requirements for electronic monitoring systems by commercial Dungeness crab vessels when RAMP management measures are in place; monitoring systems must be able to track vessel accurately without interruption; tampering is prohibited, and any interruption must be reported and corrected before fishing can resume (subsection (g))

#### 5. Dungeness crab fishing gear identification

- a. Each main buoy must be legibly marked to identify the fishery and the operator (subsection (h))
- b. Requiring trap line marking to identify the gear belonging to the Dungeness crab fishery (subsection (h))

#### 6. Alternative Gear

Further stipulate the types of limitations or conditions that may be attached to the authorization of an Alternative Gear (subsection (i))

Additionally, this proposal incorporates a number of changes that simplify and/or clarify existing requirements without changing their substance.

#### **Amend Subsection (a): Definitions**

The term "only" is added to the end of the section. This is necessary to ensure that the definition contained within this subsection only applies to Section 132.8, since many terms such as "Fishing Season" and "Fleet" may refer to different concepts in other sections.

#### **Amend Subsection (a)(4)(A): Confirmed Entanglement with California Commercial Dungeness Crab Gear**

The phrase "Confirmed Entanglement with California Commercial Dungeness crab gear" is amended to "Confirmed Entanglement in California Commercial Dungeness crab gear." This is

necessary to align the language with subsection (c)(1)(A) below.

This proposal also clarifies that any entanglement of an Actionable Species in Dungeness crab gear will be considered as a Confirmed Entanglement, regardless of where the entanglement is sighted. This change clarifies that the fishery will be accountable for all entanglements involving Dungeness crab gear, even if the entanglement is reported outside of areas where the fishery occurs. Entanglements with Dungeness crab gear can be reported outside of the typical fishing grounds because of a lag in reporting, movement of the gear from where it was originally set, or both. Regardless of the reporting location, the entanglement did occur in gear from the fishery and will be considered under this program.

#### **Amend Subsection (a)(4)(B): Confirmed Entanglement with Unknown Fishing Gear**

The phrase “Confirmed Entanglement with Unknown Fishing Gear” is amended to “Confirmed Entanglement in Unknown Fishing Gear.” This is necessary to align the language with subsection (c)(1)(A) below.

This proposal also adds the term “Fishing” between “Unknown” and “Gear” in the first sentence to maintain consistency with use of the term “Unknown Fishing Gear” within the Section.

This proposal also clarifies that observation of a Confirmed Entanglement in Unknown Fishing Gear can trigger RAMP only if it is reported within waters off California, that is defined by “Ocean Waters” under new subsection (a)(10), and clarified by bounds of the California-Oregon border and boundaries of the U.S. Exclusive Economic Zone off of California (as stated in re-numbered subsection (a)(6) - zero to 200 nautical miles offshore). The NMFS West Coast Regional Office Whale Entanglement Response Database (shared January 8, 2024) indicates that of the 337 total large whale entanglements reported between 2014 and 2023, 126 had known gear set locations. For entanglements with known gear origins reported within California (n = 84), 88% (n = 74) of those occurred with gear set off California, 8% (n = 7) were with gear set in Oregon, and 4% (n = 3) were with gear set in Washington. These patterns suggest that entanglements which are reported within California are highly likely to have occurred within California.

#### **Amend Subsection (a)(4)(C): Assigning Entanglements**

This proposal clarifies that entanglements will be assigned to the Dungeness crab fishery based on information provided by NMFS. Assignments will be made when there is sufficient data to evaluate the entanglements, or in any event at least on a quarterly basis.

While the amendment helps improve RAMP’s transparency, its main rationale is to clearly establish the process and expectations for assigning Confirmed Entanglements. NMFS Office of Protected Resources houses the only entanglement forensics team on the U.S. West Coast. As such, its final entanglement determinations are the best available information.

#### **Amend Subsection (a)(4)(D): Entanglement after Death**

This proposal removes the reference to subsection (a)(9), which is being repealed.

#### **Remove Subsection (a)(4)(E): Entanglements Involving Multiple Fisheries**

This proposal removes this subsection. Since 1982, there have only been three confirmed large whale entanglements involving gear from multiple fisheries; one in commercial sablefish and commercial coonstripe shrimp gear, one in commercial Dungeness crab and commercial

rock crab gear, and one in commercial and tribal Dungeness crab gear. There has only been a single instance since the RAMP regulations were established when an entanglement in commercial sablefish and halibut longline gear occurred. As such, this subsection is being removed to help simplify the regulations.

#### **Remove Subsection (a)(5): Fishing Grounds**

This proposal removes the definition of “Fishing Grounds.” This is necessary for streamlining the regulation, and more importantly, to avoid contradiction. Three seasons of implementation have shown that reserving a special class of management area that extends only to 100 fathoms offshore can create unintended consequences. For example, under the current subsection (h)(2), deauthorized Alternative Gear must be moved out of Fishing Grounds. This can technically mean that traps can be moved just beyond the 100-fathom contour, rather than removed from the fishing ground entirely. In such cases, using the term “every Fishing Zone” would encompass a larger geographic scope and avoid using an additional defined term.

This proposed amendment also removes from incorporation by reference Title 50, Code of Federal Regulations Part 660, Section 660.73 (Revised December 12, 2018) from this subsection. These combined changes are necessary to streamline and update the implementation of the RAMP program.

#### **Amend Current Subsections (a)(6)-(8) & (10)-(14): Definitions**

This proposal renumbers subsections (a)(6)-(8) & (10)-(14). The amendment is necessary to maintain consistent numbering following the removal of several subsections.

#### **Amend Current Subsection (a)(7): Fishing Zone**

This proposal clarifies that the Fishing Zone is delineated by “Ocean Waters,” which is further defined under the new subsection (a)(10). There were questions about the exact geographic scope of each Fishing Zone during RAMP’s implementation. Specifically defining the term “Ocean Waters” is needed to help clarify the issue.

#### **Remove Current Subsections (a)(7)(F)-(G): Fishing Zone**

The proposal removes Zone 6 and 7 (Figure 6).

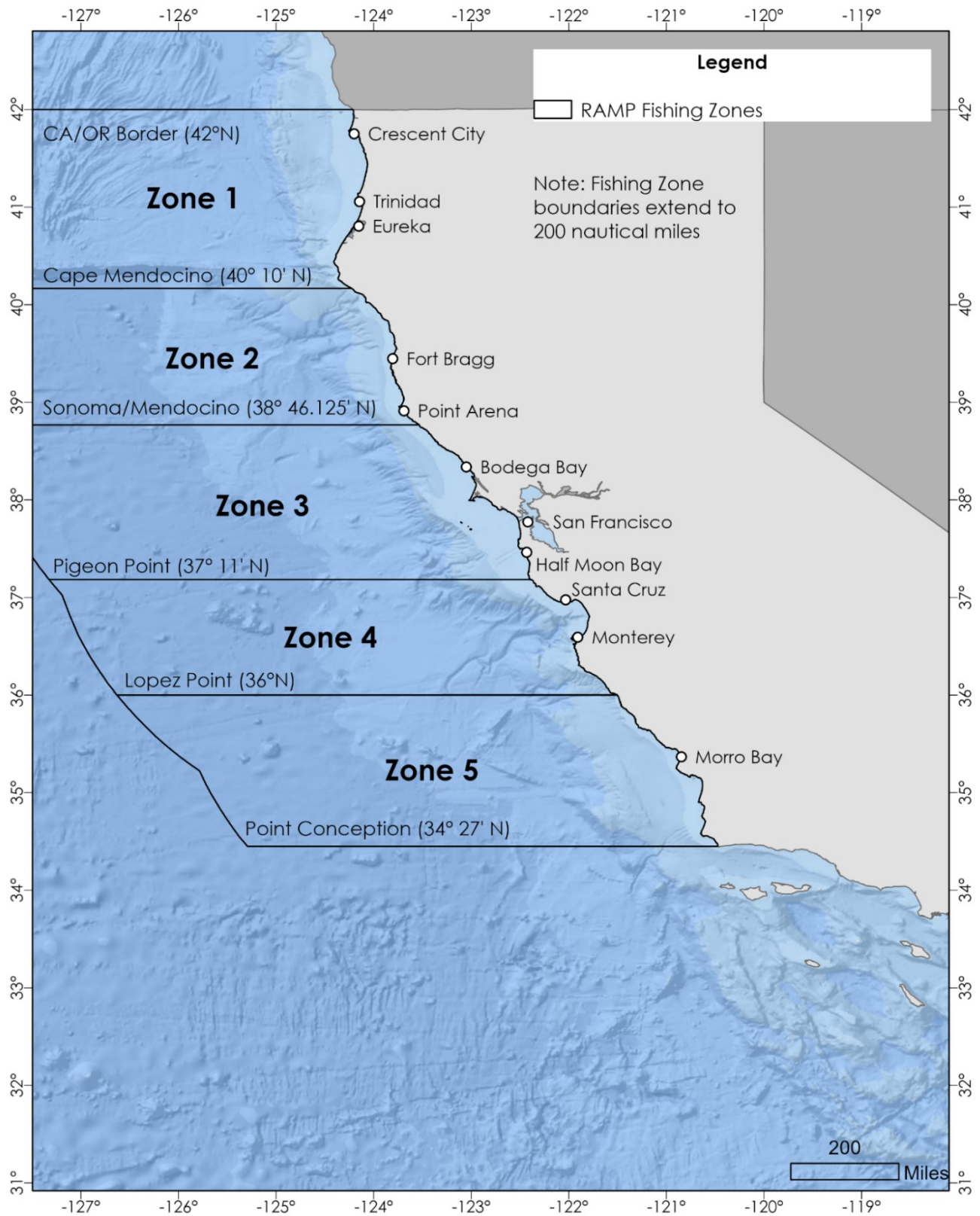


Figure 6. Proposed RAMP Fishing Zones.

Removing Zone 6 is necessary to better direct management efforts of the Department. As mentioned earlier, the Dungeness crab fishery does not occur south of Point Conception. Expending state resources to apply monitoring and management actions to Zone 6 would

divert limited state resources from more pressing and impactful work, such as collecting more data from Fishing Zones where Dungeness crab fishing does occur.

Removing Zone 7 is necessary to simplify RAMP implementation. Zone 7 was designed specifically for Pacific leatherback sea turtles (Department 2020), whose primary foraging grounds off California span the area between Pt. Arena and Pt. Pinos (Benson et al. 2011 and 2020). In practice, management actions designed to protect Pacific leatherback sea turtles have rarely been extended to Zone 7. Removing this designation dispenses with this unnecessary complexity. Taken together, Fishing Zones 3 and 4 encompass almost all of the area previously designated as Fishing Zone 7, providing a nearly identical pathway for management action while simplifying RAMP's spatial management scheme.

#### **Remove Subsection (a)(9): Take Calculation**

This proposal replaces the concept of Impact Score with Entanglement Evaluation, which will be further discussed under subsection (c)(1).

Removing the calculation of Impact Score is necessary to make RAMP consistent with ESA. The concept originally aligned with the Marine Mammal Protection Act (MMPA; 16 USC 1361 *et seq.*), which specifically evaluates incidental take of marine mammals in terms of "mortality or serious injury" (16 USC 1387). Upon further discussions with NMFS staff, it was determined that this approach is not appropriate due to the differing policy goals between ESA and MMPA.

#### **Amend and re-number Current Subsection (a)(10) to (a)(8): Marine Life Concentrations**

The description of Marine Life Concentrations is now based on the abundance of Actionable Species within the portion of the Fishing Zones out to the 100-fathom contour, instead of the Fishing Grounds.

As explained above, the specific term "Fishing Grounds" is being removed from RAMP. This section is therefore being revised to incorporate the substantive limitation previously provided by limiting measures of Marine Life Concentrations out to the 100-fathom boundary. The 100-fathom contour is described in Title 50, Code of Federal Regulations Part 660, Section 660.73 (Revision date of December 1, 2023). The Department proposes to incorporate into reference this CFR section because publication of this incorporated section in full in the CCR would be cumbersome, unduly expensive, or otherwise impractical (Title 1, Section 20, CCR).

#### **Add New Subsection (a)(10): Ocean Waters**

The term "Ocean Waters" is defined using the definition currently in use by the recreational fisheries under Section 27.00 of these regulations. As discussed above, there are some questions regarding the exact extent of the Fishing Zones. Adopting the language found in Section 27.00 is necessary because it would help maintain consistency with existing Title 14 regulations.

#### **Amend Current Subsection (a)(13): Unknown Fishing Gear**

This proposal modifies the definition for Unknown Fishing Gear to exclude gear that, while not positively identified, is "entirely inconsistent" with Dungeness crab gear.

This change is necessary to improve the consistency of RAMP's implementation and provide clarity to the regulated public. In some instances, the unidentified fishing gear in question may not be a typical configuration but could plausibly have originated from the Dungeness crab

fishery. This change clarifies that in such instances the Department will categorize the entanglements as being in Unknown Fishing Gear. This change ensures that precautionary actions are taken to reduce entanglement risk in the Dungeness crab fishery both in response to entanglements known to originate from the fishery, and in response to those which may have originated from the fishery. Entanglements in unidentified fishing gear will be categorized as Unknown Fishing Gear and evaluated under RAMP unless the gear is entirely inconsistent with materials and configurations used in the Dungeness crab fishery (e.g., polyball floats).

This interim approach will be phased out following adoption of enhanced gear marking requirements, as further described in subsection (h).

#### **Amend Current Subsection (a)(14): Working Group**

The proposal updates the website for the Working Group to the most up-to-date web address under Department management. This is necessary to ensure that the regulation's description remains accurate.

#### **Amend Subsection (b)(1): Evaluate Entanglement Risk**

The proposal moves the start date for the Director's evaluation of entanglement risk from November 1 of each year to October 15. This is necessary to align RAMP with the entanglement risk reduction measures in Section 29.80. Shortly after the adoption of RAMP, the California Fish and Game Commission (Commission) adopted regulations to reduce Actionable Species entanglement risks posed by the California recreational Dungeness crab fishery (Commission, 2020). Subsection 29.80 (c)(7) notably incorporates RAMP's Marine Life Concentration thresholds into the recreational fishery and grants the Director authority to implement management actions for the recreational fishery similarly to RAMP. Since the recreational fishery statutorily begins on the first Saturday of November, which can be as early as November 1 (as is the case for 2025), risk assessments must be completed in advance of that date.

Furthermore, this change also gives the Department and the Director more time to prepare for risk assessments ahead of a potential season opener on November 15 in Fishing Zones 3-5. The current regulation only provides a lead time of 2 weeks during which the Director can make the declaration and notify the fishery of the impending season start. Providing an additional 2 weeks will in turn give the fishery additional notice when planning their business operations.

The proposal also rewords subsection (b)(1) to make clear that further assessments will not be performed once a Fishing Zone has been closed for the season. Once this occurs, there will be no entanglement risk from actively fished vertical lines in that Fishing Zone until the next Fishing Season opens. Expending further state resources on assessments would not provide meaningful benefits.

#### **Amend Subsection (b)(2): Minimum Notice Period for Risk Assessment**

The proposal reduces the minimum notice period that the Director must provide to the Working Group and the public before each risk assessment. Instead of 48 hours prior to an anticipated risk assessment, the Director is required to provide notice 24 hours before each assessment instead.

This change is necessary to improve the quality and timeliness of the risk assessments. Experience has shown that entanglements, arrival or departure of Actionable Species, and other changes in the ocean environment can occur rapidly. The Working Group now has several seasons worth of Risk Assessment experience. Department staff have found that the delay to critical management action or season opening does not confer additional benefits for the Working Group or the public.

#### **Amend Subsection (b)(4): Duration of Management Action**

The proposal amends subsection (b)(4) to clarify that all management actions will remain in place until data from a subsequent risk assessment suggest that the original triggering conditions are no longer met, or an alternative response is more appropriate. Due to the addition of the new subsection (b)(4)(B), the current subsection has been moved into the proposed subsection (b)(4)(A).

The rewording of the current subsection (b)(4) is necessary to clarify the RAMP process. The current RAMP language states that the Director shall lift or modify any active management action if RAMP's triggering conditions are no longer met or if another action is more appropriate. This implies that the active action will persist until the Director declares otherwise, but it does not explicitly say so. To eliminate uncertainties, this subsection is reworded to explicitly state that management actions shall last indefinitely until data show otherwise, and that data will be reviewed during the next scheduled Risk Assessment.

Furthermore, new language is added as subsection (b)(4)(B). It clarifies that following a Fishing Zone closure, only authorized Alternative Gear may be used until the opening of the following Fishing Season.

The amendment is necessary to provide clarity and predictability to the Fleet. Based on historic migration patterns for the Actionable Species, entanglement risk is lowest during the winter, increases throughout the spring and summer as Actionable Species arrive within Ocean Waters off California, and then remains high through the summer and early fall until Actionable Species return to their wintering grounds (Calambokidis et al. 2015, Ingman et al. 2021). Therefore, once a particular Fishing Zone has been closed due to elevated entanglement risk, risk levels will preclude use of traditional gear during the remainder of the statutory season, and further fishing activity will be constrained to Alternative Gear.

#### **Amend Subsection (c)(1): Entanglement Evaluation in Take Calculation**

The proposed amendment changes the language describing the evaluation of the number of Confirmed Entanglements from “during a single Fishing Season, averaged over three-year period beginning with the 2021 calendar year (inclusive)” with “on an ongoing basis.”

This is necessary to align RAMP implementation with the Department's anticipated approach under an issued ITP. An issued ITP will specify the allowable number of entanglements over the permit term, which may be as long as 15 years. The Department will need to adaptively manage the fishery to avoid exceeding the specified entanglement limits. By taking actions on an ongoing basis, the Department will be better positioned to implement necessary management measures.

The term “each individual” is removed. RAMP currently provides for different calculations between humpback whale entanglements, which specifically account for mortality and serious



injury, and other Actionable Species, which do not. The accounting difference is currently reflected by two subsections, (c)(1)(A)1. and (c)(1)(A)2. Since the special accounting for humpback whale entanglements is being removed, entanglement accounting will be the same for all Actionable Species, and as such pointing out individual Actionable Species is no longer necessary.

### **Amend Subsection (c)(1)(A): Impact Score**

This proposal repeals the previous method of accounting for entanglements, the Impact Score, and the subsection is renamed as “Entanglement Evaluation.” The current Impact Scoring prorates the number of humpback whale entanglements based on their anticipated severity, as is done for analyses under MMPA. Subsequent conversations with NMFS staff clarified that it was inappropriate to confound ESA standards with those of MMPA, and changes were necessary to ensure that RAMP’s entanglement accounting aligns with ESA’s requirement. Therefore, each Confirmed Entanglement of any Actionable Species in Dungeness crab gear will be counted as a single entanglement for purposes of RAMP.

This proposal also phases out the concept of Unknown Fishing Gear. Starting November 1, 2025, a Confirmed Entanglement in Unknown Fishing Gear shall be counted as 0.25 of a Confirmed Entanglement in California Commercial Dungeness Crab Gear for the purpose of subsection (c)(1)(B). Starting November 1, 2028, a Confirmed Entanglement in Unknown Fishing Gear shall no longer be counted as a Confirmed Entanglement under subsection (c)(1)(B).

This change is necessary to equitably assign Confirmed Entanglements in Unknown Fishing Gear following the implementation of the line marking requirement. With the improvements to gear marking proposed in subsection (h), the Department anticipates that it will be increasingly able to accurately identify entanglements in Dungeness crab gear. As entanglements from Dungeness crab gear become more identifiable, their proportional contribution to the total number of Confirmed Entanglements in Unknown Fishing Gear will decrease. Once the full line marking requirement goes into effect, their proportional contribution to Confirmed Entanglements in Unknown Fishing Gear will drop to 0 for the purpose of RAMP implementation (i.e., the Department anticipates that nearly all entanglement in Dungeness crab gear will be identified as such).

For purposes of implementing RAMP, the Department currently treats 50% of all Confirmed Entanglements in Unknown Fishing Gear as Confirmed Entanglements in Dungeness crab gear (Department, 2020). With anticipation that surface line marking becomes mandatory starting November 1, 2024, the Department expects that future Confirmed Entanglements in California Commercial Dungeness Crab Gear will be identifiable if the surface portion of the gear is visible to reporting parties or entanglement responders. According to NMFS data, 261 large whale entanglements were confirmed between 2013 and 2020, of which 132 had unidentified origins (51%). Of the 132 entanglements with unknown origins, 81 entanglements, or 61%, had at least 1 buoy described or otherwise documented (Lawson, D., personal comm. (2022)). The Department interprets this to mean that surface gear marking could be visible for 61% of the entanglements currently classified as Unknown Fishing Gear. This will have two effects on entanglement evaluation. First, compared to the status quo, entanglements will be identified as occurring in the Dungeness crab fishery more often. Second, compared to the status quo, a smaller proportion of the entanglements currently classified as Unknown Fishing

Gear is expected to be in Dungeness crab gear. The Department has therefore determined it is reasonable and appropriate to update the current 0.5 multiplier used to attribute Confirmed Entanglements in Unknown Fishing Gear to the Dungeness crab fishery.

The Department expects that following implementation of surface line marking in the Dungeness crab fishery, half of the 61% (30.5%) of the entanglements that would have been classified as Unknown Fishing Gear entanglement under status quo will instead be attributed to Dungeness crab gear. The other half of the 61% (30.5%) will remain classified as Unknown Fishing Gear entanglements. Finally, the remaining 39% of these entanglements, half of which is expected to have originated from the Dungeness crab fishery, will also remain classified as Unknown Fishing Gear entanglements.

Taken together, following surface line marking, the number of Unknown Fishing Gear entanglements will decline. Relative to status quo, that new number is expected to include entanglements where buoys and surface gear are visible but originate from non-Dungeness crab sources (30.5% of status quo, or half of 61%) and entanglements where buoys and surface gear are not visible (39% of status quo), which together add up to 69.5% of the status quo number. Within this group, the Dungeness crab fishery is expected to be responsible for half of the entanglements where buoys and surface gear are not visible, or 19.5% of the status quo number. The Department therefore anticipates that proportion of Confirmed Entanglements in Unknown Fishing Gear which are in fact in Dungeness crab gear will decline to 0.28 (0.195/0.695) following implementation of surface gear line marking, as demonstrated below:

*Proportion of Dungeness crab gear following surface line marking*

$$\begin{aligned}
 &= \frac{\text{Expected Unknown Fishing Gear entanglements from Dungeness crab gear following line marking}}{\text{Total expected entanglements in Unknown Fishing Gear following line marking}} \\
 &= \frac{\text{Expected number of Entanglements from Dungeness crab gear where no buoy is visible}}{\text{Current Unknown Fishing Gear entanglements} - \text{Entanglements expected to be identified as Dungeness crab}} \\
 &= \frac{0.39(0.5x)}{x - (0.61(0.5x))} = \frac{0.195x}{0.695x} = 0.28
 \end{aligned}$$

where  $x$  = current number of of entanglements in Unknown Fishing Gear

Since only 28% of all Confirmed Entanglements in Unknown Fishing Gear are expected to have originated from the Dungeness crab fishery, it will be inequitable to continue using the 0.5 (50%) factor for this class of entanglements. As such, once surface line marking is anticipated to be in effect starting November 1, 2025, a new factor will be used for Unknown Fishing Gear entanglements. The factor will be set at 0.25 as opposed to 0.28 to simplify the regulation by equating four Confirmed Entanglements in Unknown Fishing Gear into an equivalent of one Confirmed Entanglement in California Commercial Dungeness Crab Gear.

Consultations with NMFS indicate that once additional markings are implemented for the surface buoy(s), surface line, and a substantial proportion of the vertical line between the main buoy and the trap, nearly all entanglements in Dungeness crab gear will be identifiable as such. Entanglements which are classified by NMFS as occurring in unidentified gear will almost certainly be in gear from other fisheries. As such, it will no longer be appropriate to assign a portion of those entanglements to the Dungeness crab fishery.

### **Amend Subsection (c)(1)(B): Closure and Other Management Actions**

The text of subsection (c)(1)(B), which acts as a heading for the subsection, is replaced with “Mandatory Closure and Other Management Actions.” This change is necessary to simplify the regulation and to reflect the repeal of Impact Score. Following the amendment to (c)(1), actions described in this subsection will be implemented on an ongoing basis, and the Department will no longer differentiate actions taken during a fishing season and actions taken during a calendar year. The amended language is necessary to appropriately identify the circumstances under which the actions would be implemented.

### **Add Subsection (c)(1)(B)1.: Humpback Whale Entanglement Evaluation**

This proposal revises management action triggers for humpback whales and stipulates that management action shall be taken following one Confirmed Entanglement in Dungeness crab gear (or the equivalent thereof, such as two entanglements in Unknown Fishing Gear prior to the implementation of surface line marking) and incorporates it as a new subsection (c)(1)(B)1.a. The amendment further stipulates under newly added subsection (c)(1)(B)1.b. that once 3 humpback whale entanglements in Dungeness crab gear (or the equivalent thereof, such as 1 entanglement in Dungeness crab gear and 4 in Unknown Fishing Gear prior to the implementation of surface line marking) occur within a given calendar year, the Director must close the remainder of any ongoing fishery statewide, and the fishing season shall not reopen until January of the next calendar year.

This new requirement modifies actions required by the current subsection (c)(1)(C)1., which are framed in terms of a three-year average Impact Score. Transitioning away from the Impact Score approach is necessary for the reasons set forth above for subsection (c)(1)(A). Updating from 3-year accounting to an ongoing evaluation is necessary for the state to respond quickly if entanglements begin to accumulate. While it is unclear at this stage what amount of incidental take NMFS might authorize under the ITP, the Department anticipates the approved take levels will be relatively low. Under an issued ITP, the Department would likely implement automatic actions to further reduce risk if the current trajectory of take indicates that approved take limits might be exceeded. Requiring management action following 3 entanglements is a conservative approach during this interim period, and will prepare fishery participants to comply with similar measures under an issued ITP.

The early closure to the current fishing season and automatic delay of the subsequent season until January 1 will minimize entanglement risk for humpback whales. Historical migration patterns suggest that humpback whales use foraging areas off California throughout the spring, summer, and early fall, and typically depart in November (Calambokidis et al. 2015, Ingman et al. 2021). Humpback whales were frequently observed on Department aerial surveys conducted during the 2020-21 through 2022-23 seasons (n = 547), with the vast majority observed during October and November (n = 405, 74%), and more limited numbers in December (n = 42, 8%). Delaying the subsequent season opener to January 1 should therefore prevent most overlap between humpback whales and actively fished vertical lines from the Dungeness crab fishery during the fall period.

### **Amend Subsection (c)(1)(B)2.: Blue Whale Entanglement Evaluation**

This proposal revises the management action trigger for blue whales to clarify that management action shall be taken following one Confirmed Entanglement in Dungeness crab

gear. As amended, once one blue whale entanglement in Dungeness crab fishing gear (or the equivalent thereof, such as two entanglements in Unknown Fishing Gear prior to the implementation of surface line marking) occurs, the Director must close the remainder of the fishery statewide, and the fishery will close early on April 1 for the next two calendar years.

For the same reasons as described above regarding the amendments to (c)(1)(B)1., the new requirement modifies actions required by the current subsection (c)(1)(C)2., which are framed in terms of a three-year average Impact Score.

Closure of the current fishing season and automatic closure of the next two fishing seasons on April 1 will further minimize entanglement risk to blue whales. While historical patterns suggest that blue whales begin utilizing foraging areas off California in July and depart in October or November (Calambokidis et al. 2015), recent research indicates that blue whales have begun arriving at the Farallon Islands (Fishing Zone 3) earlier in mid-May and departing in early October (Ingman et al. 2021). Blue whales were infrequently observed on Department aerial surveys conducted during the 2020-21 through 2022-23 seasons (n = 19), with nearly all sightings (n = 15) during the months of October and June. Based on these migratory patterns, the Department considers that blue whale entanglements in actively fished vertical lines would most likely occur towards the end of the fishing season. Closing the season prior to their expected arrival within the fishing grounds should therefore prevent overlap between blue whales and actively fished vertical lines. By selecting a closure date of April 1, the Department creates a buffer period during which gear recovery efforts can remove lost or abandoned gear, further reducing the risk for further entanglements.

### **Amend Subsection (c)(1)(B)3.: Pacific Leatherback Sea Turtle Entanglement Evaluation**

As is the case with humpback and blue whales, this proposal revises the management action trigger for Pacific leatherback sea turtles to clarify that management action shall be taken following one Confirmed Entanglement in Dungeness crab gear. As amended, once one Pacific leatherback sea turtle entanglement (or the equivalent thereof, such as two entanglements in Unknown Fishing Gear prior to the implementation of surface line marking) occurs, the Director must close the remainder of the fishery within Fishing Zones 3 & 4. Additionally, for the next nine calendar years, the fishing season would be restricted to January 1 to May 31 in those Fishing Zones.

For the same reasons as described above regarding the amendments to (c)(1)(B)1. and 2., the new requirement modifies actions required by the current subsection (c)(1)(C)3., which are framed in terms of a three-year average Impact Score.

The Western Pacific population of leatherback sea turtles, whose members forage off the California coast during the summer, are one of the most endangered marine megafauna, with an 80% decline in U.S. West Coast sightings between 1990 and 2017 (Benson et al. 2020). The Pacific leatherback sea turtle was listed under the California Endangered Species Act in December 2022, and the myriad of threats faced by this population are detailed in a recent status review (Department 2021). Protecting such a vulnerable population calls for a highly precautionary framework.

Closure of the current fishing season and automatic curtailment of subsequent fishing seasons is necessary to further minimize entanglement risk to Pacific leatherback sea turtles. Pacific leatherback sea turtles are most common within RAMP Fishing Zones between July and

September, although the exact timing fluctuates based on upwelling conditions (Benson et al. 2007; Eguchi et al. 2016). Individuals begin to depart key foraging areas (i.e., Fishing Zones 3 and 4) in October and November when water temperature begins to drop and productivity decreases (Thomas and Strub 2001; Benson et al. 2011). Based on these migratory patterns, Pacific leatherback sea turtle entanglements in actively fished vertical lines could occur at both the beginning and the end of the statutory fishing season. Restricting the fishery to a period during which Pacific leatherback sea turtles are rarely, if ever, present within foraging areas (January 1 – May 31) should therefore prevent overlap between Pacific leatherback sea turtles and actively fished vertical lines. By selecting a closure date of May 31, the Department further creates a buffer period during which gear recovery efforts can remove lost or abandoned gear, further reducing the risk of entanglements.

The extended duration by nine calendar years of the automatic action is necessary given the highly endangered status of this species. The Department anticipates the approved take levels for leatherback sea turtles under an issued ITP will be extremely low. Therefore, fishery operations within key foraging habitats must be limited to known low risk periods for several years in order to avoid exceedance of permitted take levels.

### **Remove Subsection (c)(1)(C): Impact Score Calculation – Action Taken During a Calendar Year**

This proposal repeals subsection (c)(1)(C). As explained above, the state is redesigning its management framework under Confirmed Entanglement triggers and moving away from calculating entanglements on a rolling three-year basis. As part of that shift, the Department will no longer differentiate between management actions taken during the open fishing season as compared to during a given calendar year. As such the current subsection (c)(1)(C) is no longer applicable and is repealed.

### **Amend Subsection (c)(2): Marine Life Concentrations Survey Validity**

The proposal removes an internal reference to help simplify the regulation. The reference has very limited value since the reader is already reading the section.

This proposal also removes the reference to Fishing Zones. The reference is redundant since the amended subsection (a)(8) already defines Marine Life Concentrations as being based on Fishing Zones. This proposal adds a reference to the 100-fathom boundary to clarify that, per the definition of subsection (a)(8), Marine Life Concentrations are only evaluated out to the 100-fathom boundary.

This proposal removes the time limit for which a Marine Life Concentration survey would be valid. Survey data are currently considered outdated after a single risk assessment. The requirement was originally developed out of concerns that older data may not accurately reflect current conditions. The concerns have not turned out to be well-founded. Past Marine Life Concentration pattern has shown to be a reliable indicator of future migration pattern (Department 2023a; Working Group 2023). This amendment allows the Department and stakeholders to develop RAMP decisions based on the best information available, not just those obtained within a specific period.

#### **Amend Subsection (c)(2)(A)4.: Marine Life Concentration Triggers**

This proposal capitalizes the term “marine life concentration,” since the term is defined under subsection (a).

This proposal removes the references to Zone 7 in subsections (c)(2)(A)4.a. and (c)(2)(A)4.b. This is necessary since the designation of Zone 7 has been repealed.

The proposal also removes the phrase “based on best available science” from subsections (c)(2)(A)4.a., (c)(2)(A)4.b., & (c)(2)(A)4.c. This simplifies the regulation and removes redundancies. Subsection (d) already requires the Director to “base decisions made under this section on best available science.” As such, the additional references to the best available science standard are unnecessary.

An extra comma is removed in subsection (c)(2)(A)4.b. following the word “period” to maintain grammatical consistency with other subsections. The letter “s” is also removed from “Blues” in “Blues Whales” in this subsection to correct the typos.

#### **Amend Subsection (c)(2)(B)2.: Marine Life Concentration Triggers**

This proposal capitalizes the first letters of Marine Life Concentrations in this subsection. Since the term is defined, the first letters should be capitalized.

#### **Amend Subsection (c)(2)(B)2.a.: Humpback Whales**

The term “or more animals over a one-week period” is added following “five (5)”. This is necessary for maintaining consistency with language under subsection (c)(2)(A)4. as well as the current (c)(2)(B)2.b.

The reference to Zone 7 is removed since the zone has been repealed.

The proposal also removes the phrase “based on best available science.” This simplifies the regulation and removes redundancies. Subsection (d) already requires the Director to “base decisions made under this section on best available science.” As such, the additional reference to the best available science standard is unnecessary.

#### **Amend Subsection (c)(2)(B)2.b.: Blue Whales**

The letter “s” is removed from “Blues” in “Blues Whales” in subsection (c)(2)(B)2.b. to correct the typos.

The reference to Zone 7 is removed since the zone has been repealed.

The proposal also removes the phrase “based on best available science.” This simplifies the regulation and removes redundancies. Subsection (d) already requires the Director to “base decisions made under this section on best available science.” As such, the additional reference to the best available science standard is unnecessary.

#### **Amend Subsection (c)(2)(B)2.c.: Leatherback Sea Turtle**

This proposal amends the phrase “is greater than or equal to one (1)” to “one (1) or greater.” This is necessary to simplify the regulatory language.

The proposal also removes the phrase “based on best available science.” This simplifies the regulation and removes redundancies. Subsection (d) already requires the Director to “base

decisions made under this section on best available science.” As such, the additional reference to the best available science standard is unnecessary.

#### **Amend Subsection (d): Management Considerations**

This proposal moves the current subsection (d)(3) to the main body of subsection (d). This is necessary to clarify the state’s process when developing RAMP management actions. Subsection (c) explicitly requires management actions taken under RAMP to be able to protect the Actionable Species. Factors such as Working Group recommendations, additional information from NMFS, and forage availability can be used to inform how this goal can be achieved. Other factors, such as the economic impact on the fishing community, can be used to evaluate competing alternatives, but they cannot override RAMP’s primary goal of reducing entanglement risk. In short, the effectiveness of minimizing entanglement risk is a threshold requirement for every management action, not one of several competing considerations.

This proposal also replaces the last sentence of the subsection’s main body with the sentence: “When assessing any management action under subsection (e), the Director shall consider the following information.” This is necessary to improve the clarity of the regulation with simpler language.

#### **Remove Current Subsection (d)(3): Effectiveness of Management Measures**

This proposal moves the current subsection (d)(3) to the main body of subsection (d) for the reason explained above.

#### **Amend Current Subsections (d)(4)-(10): Considerations**

The numbering for current subsections (4)-(10) have been updated to ensure consistency.

#### **Amend Current Subsection (d)(4): Total Economic Impact**

The first part of the subsection, “If deciding between management measures that equivalently reduce entanglement risk,” is removed as the requirement is redundant. The triggers for Management Actions under subsection (c) states that management measures taken must demonstrably protect Actionable Species, which inherently restricts economic impact analysis to measures that equivalently reduce entanglement risk. This is in line with the amendment that moves the effectiveness of management measures into the starting point for developing potential management actions.

#### **Amend Current Subsection (d)(5): Data Availability**

The proposal amends this subsection to also include available data from outside the Fishing Zones, specifically areas adjacent to the Fishing Zones. This is necessary to ensure that management actions taken under RAMP are informed by pertinent information. With the removal of Fishing Zone 6, the Southern California Bight is no longer covered by mandatory surveys. However, when opportunities arise, data from the area can help inform whether migrating whales are entering Ocean Waters from the south, or leaving Ocean Waters off California for the wintering grounds in Mexico and Central America. Similarly, other information such as forage distribution along the entire California Current system, when available, can also greatly inform the development of management actions (e.g., Santora et al. 2020; describing the effect of Large Marine Heatwave in the Northeast Pacific on the available forage along the California coast).

### **Amend Current Subsections (d)(6) & (d)(11): Marine Life Migration Pattern**

The proposal combines subsections (d)(6) and (d)(11). Instead of only known history marine life migration patterns, the Director will consider historic and current migration and concentration pattern. This is necessary to simplify the regulation. During implementation, these considerations tended to merge into one (e.g., Department, 2023a).

The reference to Fishing Grounds is amended to Fishing Zone, since the concept of Fishing Grounds is being repealed.

### **Amend Current Subsections (d)(10): Accumulation Pattern**

Under subsection (d)(10), the language “current impact score calculation within fishing season and calendar year” is stricken due to repeal of accounting for entanglements, the Impact Score outlined for subsection (c)(1). The proposal amends this subsection to include data from previous Confirmed Entanglements, including current and prior years and fishing seasons. This is necessary to ensure that management actions taken under RAMP are informed by pertinent and related information.

### **Remove Current Subsection (e)(1): Fleet Advisory**

This proposal removes Fleet Advisory as a potential management action. The removal is necessary for streamlining RAMP. RAMP’s purpose is to reduce entanglement risk for Actionable Species posed by Dungeness crab gear. To that end, management actions should have concrete, specific impacts on entanglement risk. Issuing a Fleet Advisory does not advance these goals and should be removed. After three seasons of implementation, the Dungeness crab fishery is already on notice for any elevating marine life entanglement risk. Furthermore, in instances where entanglement risk is high, the Director would invariably issue more restrictive measures such as fishery closures in conjunction with Fleet Advisory (Department, 2023b), further diminishing the need for designating Fleet Advisory explicitly as a management action. Advisories will continue to be issued as part of Department news releases but no longer with any regulatory effect.

### **Amend Current Subsection (e)(2)-(5): Management Actions**

The subsections (e)(2)-(5) are renumbered due to the removal of the current subsection (e)(1) and the addition of new subsection (e)(2) and (e)(3).

### **Amend Current Subsection (e)(2): Depth Constraint**

This proposed amendment also replaces the incorporation by reference of Title 50, Code of Federal Regulations Part 660, Section 660.71 through 660.72 (Revised December 12, 2018) with sections 660.71 (Revised March 1, 2023) and 660.72 (Revised December 1, 2023) (CFR Section 660.73 was already replaced with a more recent version December 1, 2023 under revisions to 132.8(a)(5)). These combined changes are necessary to streamline and update the implementation of the RAMP program.

### **Add New Subsection (e)(2): Surface Gear**

This proposal adds two new RAMP management actions, one of which is surface gear restriction. The Director may prohibit the use of surface lines and all surface buoys other than the main buoy, as defined by subsection 132.6(a), in any Fishing Zone. This tool is necessary to provide an option that may minimize both entanglement risk and economic harm. The best



practice of minimizing surface gear was originally developed by members of the fleet (Working Group, 2019). Adopting this tool as a RAMP management action would provide the Director with a management tool that reduces entanglement risk without necessarily impacting the fishery's overall catch. The reference to Section 132.6 is necessary to maintain consistency with existing surface gear regulations for the Dungeness crab fishery.

### **Add New Subsection (e)(3): Active Tending Requirement**

The second new RAMP management action is to authorize the Director to require all crab gear to be actively tended in a Fishing Zone. This is achieved by shortening the maximum trap service interval (96 hours) to 4 hours and the maximum distance between a Dungeness crab fishing vessel and any of its deployed gear to 2 miles. Because operators are actively tending the gear, they can remove their gear when Actionable Species are nearby to avoid entanglement. While this will significantly decrease the number of traps each operator can service, it also allows the fleet to use traditional crab traps, while limiting potential entanglement risk, and provides limited fishing opportunity when the season would otherwise be closed.

### **Amend Current Subsection (e)(4): Fishery Closure/Fishery Delay**

The term "Fishery Delay" and the phrase "or delay the opening of the commercial Dungeness crab season" are added to the subsection. This is necessary to clarify that the prohibition against commercial take and possession of Dungeness crab covers not just Fishery Closure, which is generally understood as occurring after Fishing Season has opened, but also Fishery Delay, which occurs before Fishing Season opens. The proposal clarifies that the prohibition against take, possession, sale, and landing applies to both a season delay as well as any closure once a season is underway. The phrase "take and possession of commercial take of Dungeness crab" is replaced with "commercial take and possession of Dungeness crab." The current language is grammatically unclear, and the amended language will clarify the state's intent to prohibit the commercial take and possession of Dungeness crab in closed and delayed Fishing Zones.

An exception to Alternative Gear is added for Fishery Closure. As described above under subsection (b)(4)(B), Alternative Gear may be used when a Fishing Zone is closed under RAMP. Making that exception clear in this subsection helps clarify the language and avoid potential confusion.

### **Add New Subsection (e)(5)(A): Fishing Gear Prohibition**

This proposal amends the RAMP management tool of fishery closure and delay to explicitly require removal of trap gear from any closed Fishing Zones, as well as a prohibition against deployment of traps in closed and delayed Fishing Zones.

The requirement to remove all gear is necessary to facilitate enforcement. Department staff have been asked whether crab traps can be left in the ocean during a closure if the traps are wired open, since leaving opened traps in the ocean can be interpreted as not attempting to take crabs. However, leaving the vertical lines in the ocean as entanglement hazards would defeat the whole purpose of RAMP. The language is added to make sure that the source of the entanglements, the lines, are physically removed from the ocean. References to fishery delay are added to help clarify the public's understanding. The Department has always treated delays at the beginning of a fishing season as a type of closure. However, questions were

raised on whether a delay is technically a closure since a season has not “opened.” These references will provide additional clarity to the language.

**Add New Subsection (e)(5)(B): Take, Possession, Sale, and Landing from Vessels During Closure/Delay**

The proposal prohibits the take, possession, sale, and landing of Dungeness crab from any vessel in a closed or delayed fishing zone. This is necessary to facilitate the enforcement of closures and delays. During 2021, enforcement officers encountered Dungeness crab being sold dockside in San Francisco. There were uncertainties on the part of the fishing community over whether Dungeness crab taken prior to closure can still be possessed on, and sold from, a docked vessel. Allowing Dungeness crabs to be retained aboard vessels, even those taken before a closure is instituted, greatly complicates the enforcement of a closure. A limited exception is being made under new subsection (e)(5)(C) below. The revised language will clarify that any closure would apply to take from, possession on, and sale from commercial vessels.

**Add New Subsection (e)(5)(C): Take, Possession, Sale, and Landing During Closure/Delay**

The proposal further prohibits the take, possession, sale, or landing of any Dungeness crab taken from closed or delayed Fishing Zone. This is also necessary to help facilitate the enforcement of closures and delays. However, the subsection allows for limited possession and sale of Dungeness crabs which were harvested prior to the Fishing Zone’s closure by those who possess a fish receiver’s license (FGC Section 8033), fish processor’s license (FGC Section 8034), or fish wholesaler’s license (FGC Section 8035). To ensure that the Dungeness crabs were taken from an open Fishing Zone, the subsection requires the Dungeness crab be landed with an electronic fish ticket and limits sale and possession to licensed fish receivers, processors, and/or fish retailer. The crabs can only be possessed in a live state for 240 hours after the closure, after which the crab must be cooked in line with the current requirements of Section 133.

**Amend Current Subsection (e)(5): Alternative Gear**

The proposal replaces the word “closure” with “Fishery Closure after the Fishing Season has opened,” which is necessary to maintain fidelity with subsection (e)(4). The proposal also removes the stipulation of “occurring on April 1 or later.” Limiting the use of Alternative Gear to April 1 or later is found to be unnecessarily restrictive. As Alternative Gear technology continues to develop, it will become an increasingly viable alternative to traditional gear. Restricting its use to April 1 or later will unnecessarily limit the state and the fishery of a viable management tool over a large swath of the fishing season.

The cross-reference to subsection (h) is also updated, given renumbering of the current subsection (h) as subsection (i).

Furthermore, this proposal makes clear that the restriction on “Alternative Gear use only” requirement, once implemented, would last for the remainder of the Fishing Season pursuant to FGC Section 8276. This new language is set to complement the change to subsection (b)(5)(B).

### **Amend Subsection (f): Notification for Management Actions**

This proposal replaces the phrase “taking any management action(s)” with “implementing any management action”. This is necessary to establish consistent wording with subsections (f)(2) and (j).

### **Amend Subsection (g)(1): Fishing Activity Reporting Requirements**

This proposal rephrases the subsection to explicitly hold the Dungeness crab vessel permit holders responsible for submitting the bi-weekly reports required under RAMP. Every permit holder must abide by this requirement whether they are using traditional crab traps or Alternative Gear. This proposal further clarifies that the reports must be made continuously while a permit holder has gear in any Fishing Zones for the purpose of commercially taking Dungeness crab, and specifies reports shall be submitted on or before designated report dates, which are the 1<sup>st</sup> and 16<sup>th</sup> of each month. In addition to email and text, acceptable formats under current regulation, they may also submit reports through online forms provided by the Department. Each report must provide specified information regarding the permit holder’s current fishing activity.

Switching the responsibility from vessels to the actual permit holders is necessary to facilitate enforcement, as they are the individuals responsible for complying with the law. With potential approval of Alternative Gear in the future, it is also necessary to clarify that the operators using such gear are also subject to the same reporting responsibilities.

The circumstances under which reports must be submitted have been revised for clarity. The current regulatory language specifies reports must be submitted “[w]hen participating in the California commercial Dungeness crab fishery.” Framing this requirement in terms of “participation” has created confusion, including those who have gear in the water but are not currently making landings. As described in the initial rulemaking package, the purpose of this reporting requirement is to inform real time evaluations of marine life entanglement risk (Department, 2020). Therefore, the Department’s interest is in receiving reports during the entire period when a given permit holder has traps deployed in Ocean Waters off California. The revised language also specifies that reports are only required when the permit holder is using traps for the purposes of commercially taking Dungeness crab; once the only traps remaining in Ocean Waters are lost traps, reports are no longer required.

To further facilitate compliance, the Department will develop online forms (through applications such as Microsoft Forms) that permit holders may use in place of email or text. Such form(s) will not require any information that is different from the requirements under this subsection. It is intended that an online form with specific response formats and automatic submission will make reporting easier for permit holders and improve the quality of the reports.

The proposal introduces the concept of a “designated report date” so Department staff can consistently and accurately attribute each report to the required report date. This is necessary to evaluate compliance as well as to ensure temporal analyses are based on the correct information. The proposal moves the required information in each bi-weekly report to dedicated subsections (g)(1)(A)-(F). Dungeness crab permit holders must now provide the report date and number of traps newly lost for each bi-weekly report. Department staff frequently receive bi-weekly reports which do not reference the corresponding report date (**Error! Reference source not found.****Error! Reference source not found.**). Lacking knowledge of whether the

reports were turned in late or well in advance of the next designated report date, the Department has to expend additional staff resources to follow up. In addition to taking up more of the permit holders' time, the extra work also delays crucial analyses for in-season management. Requiring permit holders to include the report date is a simple step to avoid additional work and associated delays. Reporting the number of newly lost traps on each report, rather than only reporting trap loss on the final report of the fishing season, will provide the Department with necessary information regarding gear loss and associated entanglement risk when conducting in-season risk assessments.

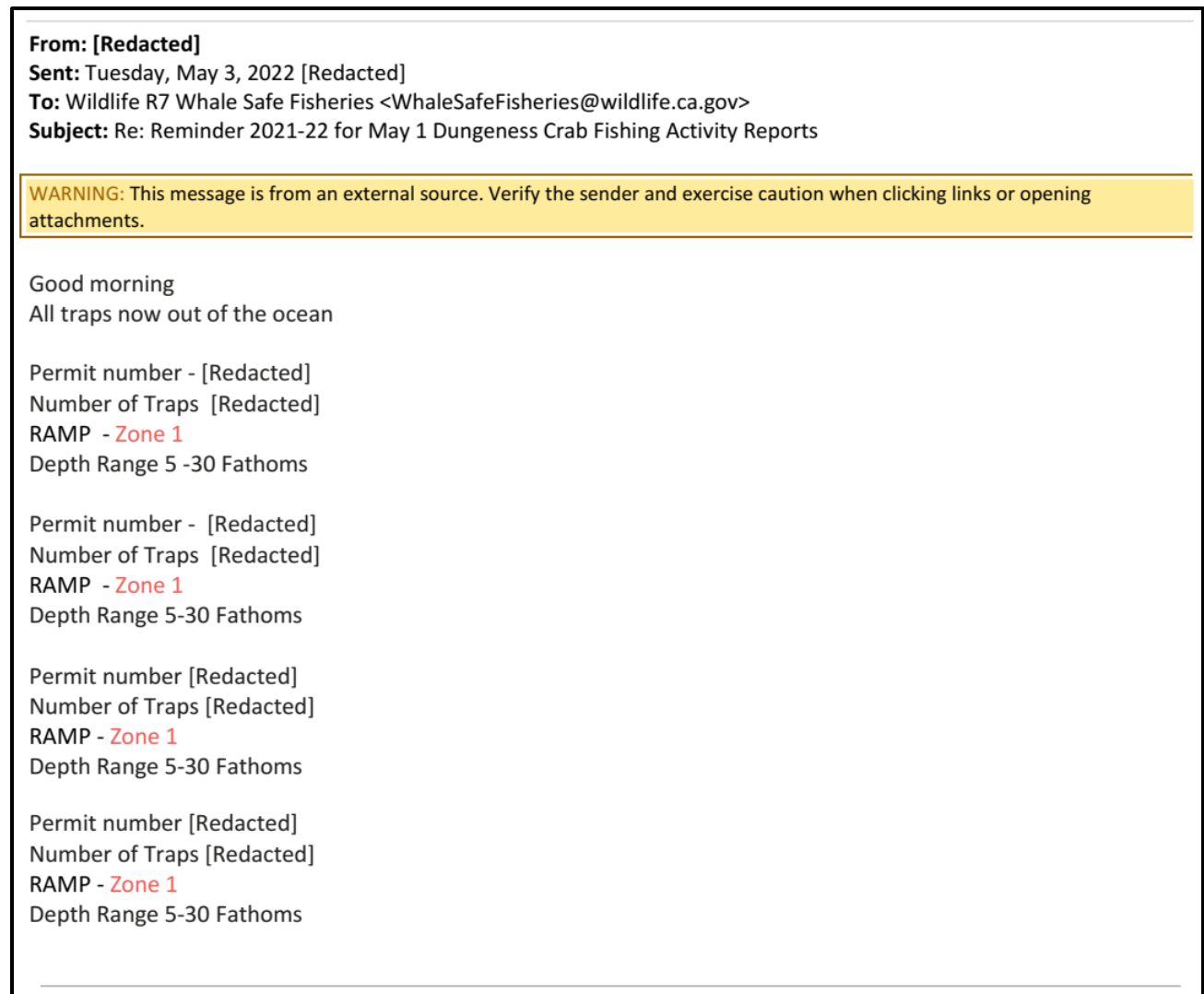


Figure 7: Example of a received Bi-Weekly Report Without Reporting Period

The remaining change to this subsection is a cleanup item. Since the Department's email has been added earlier in the subsection, the current reference to the email is removed to eliminate redundancy.

### **Add New Subsection (g)(2): Cumulative Trap Loss Reporting**

The proposal requires that the cumulative number of traps lost during the Fishing Season be reported within two weeks of a permit holder submitting their final bi-weekly report of that Fishing Season. In addition, the biennial buoy tag numbers of the lost traps must be reported

in the last report. Reporting the sequential buoy tag numbers for lost traps will improve forensic review of entanglements by allowing Department staff to narrow down the time, place, and circumstances of the entanglement event. This can further inform future management actions under RAMP, as well as possible rulemaking. The Department will also be able to compare gear loss reports with information provided on buoy tag replacement requests and documentation of lost gear recovered pursuant to Section 132.7.

By tying the requirement to submission of their last report, rather than the end of the Fishing Season, the Department will receive the information in a timely fashion. The two-week window between submission of their final report and reporting of the prior season's gear loss will provide permit holders with a reasonable time frame during which to sort through their recovered gear and evaluate gear loss.

Establishing this requirement in a new subsection, (g)(2), rather than including within subsection (g)(1), clarifies that this is a separate and additional requirement to the bi-weekly reports required above.

### **Renumber Current Subsection (g)(2): Electronic Monitoring**

This subsection is renumbered due to the addition of the new subsection (g)(2).

### **Remove Current Subsection (g)(2)(A): Electronic Monitoring When Operating under RAMP Management Actions**

Electronic monitoring system requirements are effective for all vessels as of the 2023-24 fishing season. The interim phase described in this section is no longer relevant, and is removed for clarity.

### **Amend Current Subsection (g)(2)(B): Mandatory Electronic Monitoring**

This subsection is also renumbered as subsection (3)(A) following addition of the new subsection (g)(2) and the repeal of the current subsection (2)(A).

The proposal clarifies and expands the current requirement for Dungeness crab fishing vessels to use electronic monitoring (EM) systems that contain satellite and/or cellular-based system to broadcast global positioning system (GPS) coordinates. The system must track and record a vessel at one-minute intervals without interruption for the duration of an entire fishing trip. The location data must be uploaded automatically, and the data must be available to the Department's authorized agent in addition to Department staff within 24 hours of the upload.

The revised requirements are necessary for the effective implementation of EM for the Dungeness crab fishery. Comprehensive EM coverage will provide the Department with an accurate representation of the spatial and temporal extent of fishing activities, which can help the Department more accurately evaluate co-occurrence of Actionable Species and trap gear. EM is also a necessary enforcement tool to ensure compliance with any potential area closure under RAMP. GPS is an established positioning system that has proven itself for decades. As long as data collection remains uninterrupted for the entire duration of a fishing trip, the Department will be able to accurately view and map the extent of fishing activities. With the advent of better electronic equipment, automatic data upload is now the norm, and the Department expects such data to be available automatically within 24 hours. The Department may authorize third-party entities, such as partner government agencies, to help process the data.

The phrase “participating in the California commercial Dungeness crab fishery” is further clarified by the phrase “in possession of Dungeness crab or Dungeness crab trap, when the vessel owner/operator has Dungeness crab gear present or placed in any Fishing Zone, or when otherwise participating in the California commercial Dungeness crab fishery.” This is to help with the enforceability of the subsection by providing a bright-line scenario of when a vessel is considered “participating in the fishery.”

### **Add New Subsection (g)(3)(B): Prohibition Against Tampering**

This proposal adds a new subsection (g)(3)(B) to make it unlawful for anyone to tamper with the EM equipment. It further requires every Dungeness crab permit holder to ensure that their system is functioning normally when conducting fishing activities. This new provision is necessary to ensure proper functioning of the EM system.

### **Add New Subsection (g)(3)(C): Transmission Interruption**

This proposal further requires a vessel owner or operator to return to port immediately if they notice any interruption to regular data transmission or if they have been notified by the Department of any interruption. The owner/operator must log the interruption with the Department’s Law Enforcement Division by email. The owner/operator may resume fishing only after transmission resumes. This contingency is necessary since an EM system is useful only if it is continuously transmitting fishing locations and/or data.

### **Remove Current Subsection (g)(3)**

This proposal removes subsection (g)(3), which prescribes the reporting requirements of individuals using Alternative Gear. As explained above under subsection (g)(1), this is part of the change that simplifies reporting requirements for all Dungeness crab permit holders, whether they are using Alternative Gear or not.

### **Add New Subsection (h): Dungeness Crab Fishing Gear Identification**

A new subsection will be added to help identify Dungeness crab gear in the event of entanglement. When RAMP was first adopted, the Department planned to rely on the presence of biennial buoy tags required pursuant to subsection 132.1(b) to help identify Dungeness crab gear during entanglements. However, buoy tags alone have proven to be insufficient. Between 2021 and 2023, 21 out of the 52 (40%) confirmed humpback whale entanglements reported off the U.S. West Coast involved fishing gear that NMFS and Department staff could not identify (NMFS West Coast Regional Office Whale Entanglement Response Database, shared January 8, 2024)). This proposal adds additional marking requirements for the buoys and the lines of Dungeness crab gear, two components that are known to be visible during entanglements (Lawson, D. Personal Comm. (2022)).

### **Add New Subsection (h)(1) Main Buoy**

Under subsection 132.6(a), every commercial Dungeness crab trap or string of trap must be marked with a main buoy. This proposal will require each main buoy, as well as any trailer buoys, to be marked with the identification letter “D.” Each main buoy must also be marked with the commercial fishing license number of the gear’s operator, and that number must be placed in front of one of the identification letters. The numbers must be at least 1.5 inches in height and drawn with a line no less than 0.25 inch thick. The letters must be at least 3 inches in height and drawn with a line no less than 0.25 inch thick. Buoys that are 4 inches in

diameter or greater must have the letter on 4 opposing sides, while those that are smaller must have the letters on 2 opposing sides. Lastly, the numbers and letters must be distinctly marked in a color contrasting with the buoy, and they must be visible and legible at all times.

These new requirements are necessary to better identify entangling gear and to bring the Dungeness crab fishery in line with other state-managed trap fisheries. During the adoption of the state's Standardized Commercial Trap Marking Program (Section 180.5), it was decided that the Dungeness crab fishery would not be subject to the new program due to the sufficiency of the Dungeness crab buoy tags at identifying the gear (Department, 2019). However, the ongoing need to identify every fishing gear in the event of an entanglement as reliably as possible has prompted the Department to reconsider sufficiency of current marking requirements. Buoy tags may be obscured or otherwise not visible during an on the water response efforts or in documentation collected by the reporting party. As such, the other components of a Dungeness crab gear that are visible in the event of entanglement, namely the buoys and the lines, must also be marked. Adopting the requirements of Section 180.5, namely the size of the numbers and letters, their locations, and their legibility standard, will ensure consistency across the state's trap fisheries.

### **Add New Subsection (h)(2) Line Marking**

This proposal implements a line marking requirement for the Dungeness crab fishery. Starting November 1, 2025, every Dungeness crab permit holder must mark all their surface lines with alternating colors of black and purple, with surface lines defined as the length of line between any two buoys. Starting November 1, 2028, for gear that are fished deeper than 20 fathoms, both the surface lines and the top 15 fathoms of line between the main buoy and the trap must be marked. For gear that are fished at 20 fathoms depth or shallower, the entire length of every line except for the bottom 5 fathoms must be marked. The colors must be clearly visible and either applied by the manufacturer during the manufacturing process or painted after market. If painted, the colors must be in alternating solid color marks each being 6-12 inches and must be maintained so the color scheme of purple-and-black is clearly visible. If applied by manufacturer, the lines must compose of two purple strands and one black strand with an allowance for tracers of any color.

The line marking provision is necessary to help identify the sources of entanglements where the line is the only visible part of the gear (Figure 8). Between 2013 and 2020, approximately 47% of confirmed entanglements of unknown origin had high quality imagery which could have allowed for the detection of line marks (NMFS 2022). Specifying a unique line marking requirement for the Dungeness crab fishery will enhance the Department's ability to better identify entanglements which occur in gear from the fishery. Lines with the requisite purple-and-black pattern can be identified as Dungeness crab gear, while lines without the pattern can be ruled out as Dungeness crab gear. A positive identification of Dungeness crab gear can further help the Department identify the likely origin of the gear, how it was lost, and how similar situations can be prevented in the future.



Figure 8: Figure of a humpback whale entangled in fishing gear with no clearly visible buoy (NMFS 2018).

The dual purple-and-black coloring serves to distinguish California Dungeness crab gear from Oregon commercial Dungeness crab gear, for which the state of Oregon is contemplating adopting a yellow-and-black pattern (ODFW, 2023), and Washington commercial Dungeness crab gear, which has adopted red as its state color (Washington Administrative Code 220-340-430). Purpose-manufactured colored lines are the most durable solution. However, allowing Dungeness crab permit holders to paint their lines will provide the fishing community with more flexibility. Because after-market paint will not be as durable as purpose-manufactured lines, additional requirements that colors must be clearly alternating and that they are properly maintained are necessary.

The requirement will be phased in over several years to provide the fishing community with time to adjust. Surface gear have been identified as the most visible portion of a fishing gear during an entanglement (Lawson, D. Personal Comm. (2022)). As such, surface lines will be required to be marked with the new pattern starting with the 2025-26 fishing season. Starting with the 2028-29 fishing season, lines between the main buoy and the trap must also be marked.

The bottom 5 fathoms of lines will be exempt from the November 1, 2028 requirements for gear that are fished shallower than the 5 fathoms depth to accommodate the prevailing rigging practice of the Dungeness crab fleet. Crab traps are generally attached to 5 fathoms of neutrally or positively buoyant lines to minimize entanglement with the trap when it is deployed. This length of line remains attached to the trap for the entire fishing season, while other portions of the line may be swapped out based on the depth being fished. Maintaining this practice is not expected to interfere with the effectiveness of the line markings and will preserve the efficiency of current fishing practice. Due to the conditions in Northern California, vessels rarely if ever fish shallower than the 5 fathoms depth. However, in such cases, the entire length of all lines must be marked to ensure that at least some markings are visible.



### **Renumber Current Subsection (h): Alternative Gear**

The current subsection (h) is renumbered as subsection (i) as well as all its subordinate subsections due to the addition of the new subsection (h).

### **Amend Current Subsection (h)(1)(B): Alternative Authorization Criteria**

The names of the criteria are converted from noun to adjective in paragraphs (h)(1)(B)1. through (h)(1)(B)5. Specifically, “Detectability” is converted to “Detectable,” “Retrievability” to “Retrievable,” “Ability to Identify” to “Identifiable,” “Benefit” to “Beneficial,” and “Enforceability” to “Enforceable.” The changes improve the readability of the subsection. Additionally, the beneficial standard is revised to be based solely on the reduction to entanglement risk that an Alternative Gear provides, rather than risk or severity. This change will improve alignment with the ESA.

### **Amend Current Subsection (h)(1)(B)(1): Detectable**

This proposal adds an additional requirement that Alternative Gear must be detectable to prevent fishing in closed areas. This clarification is necessary because enforcement of closed areas is paramount to the implementation of RAMP. Alternative Gear cannot be authorized unless they meet this requirement.

### **Add New Subsection (i)(1)(D): Alternative Gear Authorization Conditions**

This proposal adds a new subsection prescribing specific conditions that Alternative Gear authorization under RAMP may be subject to. These are Fishing Zone limitation, depth limitation, maximum trap limit, notification to the Department prior to deployment, and conditions necessary to facilitate enforcement. These requirements are necessary to ensure that Alternative Gears are used effectively to reduce entanglement risk and minimize gear conflict while maintaining enforceability. Ropeless gear, for example, are not easily detectable, raising the potential for gear conflict and legal violations. Gears such as those with break lines, on the other hand, experience more technical challenges at deeper depths (Willse, 2022). Due to the novelty and potential diversity of Alternative Gears that may be authorized in the future, the Director needs the flexibility to impose a wide variety of conditions on their use.

### **Amend Current Subsection (h)(1)(D): Decline to Authorize Alternative Gear**

The current subsection (h)(1)(D) is being renumbered as (i)(1)(E) due to the addition of the new subsections described above. This is necessary to maintain consistency. Furthermore, “the” is added in front of “written request,” and the phrase “on the following considerations, upon review of a written request” is replaced with “for any of the following reasons.” These are minor grammatical changes that help improve the readability of the regulation.

The references to subsections (h)(1)(B) and (h)(1)(C) are changed to (i)(1)(B) and (i)(1)(C), respectively, to reflect the renumbering of the subsection.

### **Amend Current Subsection (h)(2): Deauthorization**

The reference to subsection (h)(1)(D) is changed to (i)(1)(D) to reflect the renumbering of the subsection.

This proposal changes the requirement to remove all Alternative Gear from the Fishing Grounds upon deauthorization to removal of all Alternative Gear from every Fishing Zone. This is part of the effort to remove the concept of Fishing Grounds.

**Amend Current Subsection (h)(3): List of Authorized Gear**

This proposal requires every condition associated with an authorized Alternative Gear under the newly added subsection (i)(1)(D) to be included in the list of authorized Alternative Gear that the Department keeps on its website. Since the Department may stipulate specific requirements for a given Alternative Gear under subsection (i)(1)(D), providing the public with these requirements at an accessible location is necessary to facilitate compliance.

**Add New Subsection (j): Violation**

This proposal adds a new subsection (j) to clarify that it is unlawful to violate any management action imposed by the Director, any condition placed on the use of Alternative Gear, any reporting requirement, or any other requirement imposed under this section. This additional subsection is necessary to facilitate the Department's enforcement efforts by clarifying that the requirements of this section are legal obligations and violating them carries legal ramifications. Participants of the Dungeness crab fishery will be on notice as to their obligations under RAMP.

**(b) Goals and Benefits of the Regulation**

This proposal clarifies existing RAMP language, particularly those pertaining to Confirmed Entanglements, and improves the program's enforceability. The proposal also promotes compliance with ESA, simplifies the geographic aspect of the program, improves the efficiency and predictability of the risk assessments, improves program flexibility by introducing two new management tools, improves data collection by updating the biweekly reporting requirement, implements new marking requirements to improve information quality and help phase out the use of Unknown Fishing Gear, improves the integrity of the electronic monitoring program, and finally to flesh out the conditions for Alternative Gear authorization and use.

**(c) Authority and Reference Sections from Fish and Game Code for Regulation**

Authority: Section 8276.1, Fish and Game Code

Reference: Section 8276, 8276.1, 8276.5, 9002.5, & 9008, Fish and Game Code

**(d) Specific Technology or Equipment Required by Regulatory Change**

EM system requirements are effective for all vessels as of the 2023-24 fishing season (proposed revised 132.8(g)(2)(A)). The Dungeness crab permit holders who do not yet have the EM on their vessels will be expected to acquire, install, and operate EM devices that comply with the requirements of the regulations.

The crab trap line marking requirements will be phased in starting in 2025-26 through the 2028-29 seasons to accommodate transition costs. Surface lines will be required to be marked with a purple-and-black striped pattern starting with the 2025-26 season. Lines between the main buoy and the trap must also be marked starting with the 2028-29 season. Permit holders may either paint their existing lines with compliant colors or purchase manufactured lines with the required color scheme.

(e) Identification of Reports or Documents Supporting Regulation Change

- Benson, S. R., Forney, K. A., Harvey, J. T., Carretta, J. V., & Dutton, P. H. (2007). Abundance, distribution, and habitat of leatherback turtles (*Dermochelys coriacea*) off California, 1990– 2003.  
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- Benson SR, Eguchi T, Foley DG, Forney KA, Bailey H, Hitipeuw C, Samber BP, Tapilatu RF, Rei V, Ramohi P, Pita J, Dutton PH. (2011). Large-scale movements and high-use areas of western Pacific leatherback turtles, *Dermochelys coriacea*. *Ecosphere* 2(7): 1-27. <https://esajournals.onlinelibrary.wiley.com/doi/pdfdirect/10.1890/ES11-00053.1>
- National Marine Fisheries Service (2022). National Marine Fisheries Service Entanglement Forensic Line Marking Analysis, unpublished.
- Oregon Department of Fish and Wildlife (2023). 2023 Public Notice of Marine Life Entanglement Proposed Rulemaking.  
[https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/docs/2023/Public\\_Notice\\_2023-0706\\_FINAL.pdf](https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/docs/2023/Public_Notice_2023-0706_FINAL.pdf)
- Santora JA, Mantua NJ, Schroeder ID, Field JC, Hazen EL, Bograd SJ, Snyderman WJ, Wells BK, Calambokidis J, Saez L, Lawson D, Forney KA. (2020). Habitat compression and ecosystem shifts as potential links between marine heatwave and record whale entanglements. *Nature Communications* 11:1–12.  
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<https://repository.library.noaa.gov/view/noaa/29002>
- Willse, N., Summers, E., & Chen, Y. (2022). Vertical Line Requirements and North Atlantic Right Whale Entanglement Risk Reduction for the Gulf of Maine American Lobster Fishery. *Marine and Coastal Fisheries*, 14(2), e10203.  
<https://afspubs.onlinelibrary.wiley.com/doi/full/10.1002/mcf2.10203>
- Working Group (2019). 2019-2020 Best Practice Guide For Minimizing Marine Life Entanglement.  
[https://www.opc.ca.gov/webmaster/media\\_library/2019/11/2019-20\\_BPG\\_Final.pdf](https://www.opc.ca.gov/webmaster/media_library/2019/11/2019-20_BPG_Final.pdf)
- Working Group (2023). California Dungeness Crab Fishing Gear Working Group (Working Group) Management Recommendation to inform the Risk Assessment and Mitigation Program for the California Department of Fish and Wildlife. March 29, 2023.  
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=211270>

(f) Identification of Reports or Documents Providing Background Information

- Benson, S.R. (2019). Biology of Leatherback Turtle off California: Movements, Foraging Ecology, Abundance, and Status. California Dungeness Crab Fishing Gear Working

Group, 23 April 2019.

[https://www.opc.ca.gov/webmaster/media\\_library/2019/10/D\\_Crab\\_working\\_group\\_3-5Sep2019\\_Leatherback.pdf](https://www.opc.ca.gov/webmaster/media_library/2019/10/D_Crab_working_group_3-5Sep2019_Leatherback.pdf)

Benson, S. R., Forney, K. A., Moore, J. E., LaCasella, E. L., Harvey, J. T., & Carretta, J. V. (2020). A long-term decline in the abundance of endangered leatherback turtles, *Dermochelys coriacea*, at a foraging ground in the California Current Ecosystem. *Global Ecology and Conservation*, 24, e01371.

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California Department of Fish and Wildlife. (2019). State of California, Department of Fish and Wildlife, Initial Statement of Reasons for Regulatory Action. Amend Sections 122.1, 125, 126.1, 180.1, & 180.5 Title 14, California Code of Regulations Re: Standardized Commercial Trap Marking Program.

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California Department of Fish and Wildlife. (2020). State of California, Department of Fish and Wildlife, Amended Initial Statement of Reasons for Regulatory Action (Pre-publication of Notice Statement). Add Section 132.8, Title 14, California Code of Regulations Re: Risk Assessment Mitigation Program: Commercial Dungeness Crab Fishery.

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California Department of Fish and Wildlife (2021). A Status Review of Pacific Leatherback Sea Turtle (*Dermochelys coriacea*) in California.

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California Department of Fish and Wildlife. (2023a). Final Assessment of Marine Life Entanglement Risk and Management Recommendation. March 29, 2023.

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<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=183155&inline>

Harvey C, Garfield T, Williams G, Tolimieri N. (2022). 2021-2022 California Current Ecosystem Status Report. Pacific Fishery Management Council March 2022 Meeting, Agenda Item H.2.a., CCIEA Team Report 1.

<https://www.pcouncil.org/documents/2022/02/h-2-a-cciea-team-report-1-2021-2022-california-current-ecosystem-status-report-and-appendices.pdf/>

Office of Administrative Law (2020). Notice of Regulatory Action. 2020-0902-02

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Wild P.W., Tasto R.N. (1983). Life History, Environment, and Mariculture Studies of the Dungeness Crab, *Cancer magister*, With Emphasis on The Central California Fishery Resource. California Department of Fish and Game. Fish Bulletin 172. 352 p.  
<https://escholarship.org/uc/item/3jx926kt>

(g) Public Discussions of Proposed Regulations Prior to Notice Publication

1. Different parts of the proposed regulatory changes were presented and discussed at each California Dungeness Crab Fishing Gear Working Group Risk Assessment since 2022 as well as each annual meeting in the fall:
  - a. September 22, 2022 – Working Group Annual Meeting Session One – Webinar
  - b. October 4, 2022 – Working Group Annual Meeting Session Two – Webinar
  - c. October 27, 2022 – Risk Assessment – Webinar
  - d. November 18, 2022 – Risk Assessment – Webinar
  - e. December 5, 2022 – Risk Assessment – Webinar
  - f. December 20, 2022 – Risk Assessment – Webinar
  - g. January 10, 2023 – Risk Assessment – Webinar
  - h. March 29, 2023 – Risk Assessment – Webinar
  - i. April 28, 2023 – Risk Assessment – Webinar
  - j. October 11, 2023 – Working Group Annual Meeting – Santa Rosa, Webinar
  - k. October 25, 2023 – Risk Assessment – Webinar
  - l. November 15, 2023 – Risk Assessment – Webinar
  - m. December 5, 2023 – Risk Assessment – Webinar
  - n. December 19, 2023 – Risk Assessment – Webinar
  - o. January 10, 2024 – Risk Assessment – Webinar
  - p. February 13, 2024 – Risk Assessment - Webinar
2. The proposal has also been presented and discussed at both California Dungeness Crab Task Force annual meetings in the past two years:
  - a. November 2-3, 2023 – Santa Rosa
  - b. October 25-26, 2022 – Webinar

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change

The following were alternatives for the regulation change itself. No other alternatives were identified by or brought to the attention of Department staff that would have the same desired regulatory effect.

1. Retaining Fishing Zone 6

Department staff have considered retaining Fishing Zone 6. The zone would be exempted from management action (since Dungeness crab fishery does not occur within it) and mandatory surveys, while still allowing the Director to consider data coming from within the zone. However, removing the Fishing Zone ultimately creates the most concise language.

2. Prescribe specific dates for risk assessments in the fall and their associated opening dates

Department staff have considered prescribing specific dates for each risk assessment in the fall, with each assessment then tied to a specific prospective opening date. The advantage of this approach is that it creates greater certainty for Department staff as well as the Dungeness crab fleet. However, concerns over factors beyond the Department's control, such as when third-party data will become available, and ongoing changes in the ocean environment dissuaded staff from taking that path.

3. When active tending is required, restrict the distance between deployed traps and the fishing vessel to 1 mile

A shorter maximum distance between a vessel and its deployed traps was considered for the new active tending management tool. However, the distance was extended to 2 miles to allow greater operational flexibility for the fishing fleet.

4. Requiring biweekly report to be transmitted through an electronic form

Department staff considered making transmission by Department's electronic form mandatory. However, using electronic forms for this type of application is still relatively new. The Department is still processing the lessons that it has learned from the recent transition to electronically submitted landing receipts. As such, requiring an electronic form for biweekly reports is considered premature.

5. Requiring permit holders to report the tag number of lost traps during each biweekly report

Department staff considered requiring each permit holder to report the specific tag number of lost traps during each biweekly report. However, most permit holders do not track individual tags that closely during the fishing season, and requiring the entire fleet to shift its accounting practices enough to accommodate this change was deemed unrealistic and too disruptive.

#### (b) No Change Alternative

Without the proposed changes, the identified inefficiencies, deficiencies, and ambiguities within RAMP will persist and continue to limit the state's ability to respond to Actionable Species entanglement, enforce management actions, collect data, and improve management tools.

#### (c) Description of Reasonable Alternatives that Would Lessen Adverse Impact on Small Business

It is reasonable to presume that the permit holders and a large share of businesses that support the Dungeness crab fleet harvest and distribution are small businesses. New compliance requirements and other changes to the regulations would increase the success of RAMP to achieve its goal in trying to avoid entanglement by Actionable Species. In light of the available evidence, Department staff could not identify reasonable alternatives that would lessen adverse impact on small business and still achieve the goals of this proposal.

### V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures needed.

## VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States

The Department does not anticipate that the proposed action will have significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states because west coast states with commercial Dungeness crab fisheries are developing or have similar mitigation programs in effect. The proposed changes provide improved enforceability and clarification of existing regulations that aid in the continued preservation of marine resources, while endeavoring to minimize interruptions to commercial harvest opportunities and thus, the prevention of adverse economic impacts.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The Department does not anticipate adverse impacts on the creation or elimination of jobs within the state given that the proposed amendments are to the existing RAMP program, with improvements that include consideration of other management actions as options. The Department does not anticipate adverse impacts on the creation of new business, the elimination of existing businesses or the expansion of businesses in California. The proposed changes are to provide improved enforceability and clarification of existing regulations that are not anticipated to change the annual level of harvest activity, and thus the demand for goods and services related to marine resource harvest that could impact the demand for labor, nor induce the creation of new businesses, the elimination, nor the expansion of businesses in California. The Department does not anticipate any benefits to the health and welfare of California residents or to worker safety. The Department anticipates benefits to the State's environment indirectly through improved accuracy in information collected for the betterment of marine resources management, which improves fish stocks and the marine ecosystems.

(c) Cost Impacts on a Representative Private Person or Business

The Department is aware of cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. Dungeness crab permit holders are anticipated to have some additional gear-marking and EM costs, and some increases in reporting time (see STD399 and Addendum).

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

(e) Nondiscretionary Costs/Savings to Local Agencies: None

- (f) Programs Mandated on Local Agencies or School Districts: None
- (g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None
- (h) Effect on Housing Costs: None

## VII. Economic Impact Assessment

### (a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State

The Department does not anticipate that the proposed regulation will prompt the creation or the elimination of jobs within the state. Modifications to the existing RAMP regulation for clarity and improved enforceability are not expected to affect current harvest activity and would not precipitate the creation of jobs or the elimination of jobs.

### (b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State

The Department does not anticipate that the proposed regulation would induce impacts on the expansion of businesses currently doing business within the state. The proposed regulations are not anticipated to increase demand for services or products from the existing businesses that serve individuals who engage in marine resource harvest.

### (c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State

The Department does not anticipate that the proposed regulations would induce impacts on the expansion of businesses currently doing business within the state. The proposed regulations are not anticipated to increase demand for services or products from the existing businesses that serve individuals who engage in marine resource harvest.

### (d) Benefits of the Regulation to the Health and Welfare of California Residents

The Department does not anticipate benefits to the health and welfare of California residents because the proposed regulatory change has no relation to health or welfare.

### (e) Benefits of the Regulation to Worker Safety

The Department does not anticipate any benefits to worker safety from the proposed regulations because there is no nexus with working conditions.

### (f) Benefits of the Regulation to the State's Environment

The Department anticipates benefits to the environment because the data collected will improve the quality of the information used by the Department in its ocean fisheries management decisions resulting in net benefits to management of these resources and their related ecosystem. It is the policy of this state to encourage the conservation, maintenance, and utilization of the living resources of waters under the jurisdiction and influence of the state for the benefit of all the citizens of the state.

### (g) Other Benefits of the Regulation



The proposed amendments to the current RAMP program are anticipated to improve the state's ability to prevent and respond to Actionable Species entanglement, enforce management actions, collect data, and improve management tools.

## Informative Digest/Policy Statement Overview

Unless otherwise specified, all section and subsection references in this document are to Title 14 of the California Code of Regulations (CCR). Furthermore, unless otherwise specified, “Dungeness crab fishery” refers to the California commercial Dungeness crab fishery.

The California Department of Fish and Wildlife (Department) adopted the Risk Assessment and Management Plan (RAMP) regulation in 2020 to reduce and mitigate the entanglement risk for humpback whales, blue whales, and Pacific leatherback sea turtles (Actionable Species) posed by the Dungeness crab fishery. Under RAMP, management responses will trigger whenever a confirmed entanglement of Actionable Species occurs, or the observed number of an Actionable Species reaches specific thresholds within any of the seven prescribed management area (Fishing Zone) along the state’s coast. The Director of the Department (Director) will also take management actions whenever the number of confirmed entanglements for an Actionable Species reaches specific statewide thresholds. Under several of these conditions, the Director is required to delay the fishery or close it early. Once the Dungeness crab fishery is closed within a Fishing Zone, only specific fishing gear designed to reduce entanglement risk that have been approved by the Department (Alternative Gear) may be used in such zones.

It has been over three years since the RAMP regulation, codified as Section 132.8, first went into effect, and it has since been implemented for three fishing seasons for the Dungeness crab fishery. The amendments proposed here are based on the Department’s experience implementing Section 132.8 as well as feedback from stakeholders and federal counterparts.

### 1. Definition and calculation for Confirmed Entanglement:

- a. Clarify that an Actionable Species entanglement involving California commercial Dungeness crab gear observed anywhere will be considered as a Confirmed Entanglement (subsection (a))
- b. Clarify that an Actionable Species entanglement in Unknown Fishing Gear will count as a Confirmed Entanglement only if it is reported from a Fishing Zone off California (subsection (a))
- c. Clarify that Confirmed Entanglements will be assigned based on information provided by the NMFS, and will be made when sufficient data are available, but no longer than on a quarterly basis (subsection (a))
- d. Remove provision pertaining to Confirmed Entanglements involving multiple fisheries (subsection (a))
- e. Simplify Confirmed Entanglement’s calculation by repealing the concept of Impact Score (subsections (a) & (c))
- f. An unidentifiable gear will be considered as Unknown Fishing Gear unless the gear in question is entirely inconsistent with a Dungeness crab trap (subsection (a))
- g. Phase out assignment of Confirmed Entanglements in Unknown Fishing Gear to the Dungeness crab fishery based on a new line marking requirement (subsection (c) & (h))

### 2. Management areas under RAMP:

- a. Specify that Fishing Zones extend to all “Ocean Waters” within the specified area (subsection (a))
- b. Remove the concept of “Fishing Grounds” and apply the 100-fathom boundary to only the Marine Life Concentration surveys (subsections (a), (c), and (d))
- c. Defines “Ocean Waters” (subsection (a))
- d. Remove Fishing Zones 6 & 7 (subsection (a))

### 3. Management Actions:

- a. Move the start time of risk assessments from November 1 to October 15 and discontinue assessment once a Fishing Zone has been closed for the rest of the season (subsection (b))
- b. Clarify that a management action will remain in effect until it is revoked (subsection (b))
- c. If a Fishing Zone is closed for the season, only approved Alternative Gear can be used in that zone for the rest of the season (subsections (b) & (e))
- d. Institute revised Confirmed Entanglement thresholds to align with ESA and anticipated requirements under an ITP (subsection (c))
- e. The validity of a survey for risk assessment no longer expires after a specified period of time (subsection (c))
- f. Elevate a management action’s effectiveness at minimizing entanglement to its primary goal (subsection (d))
- g. Consolidate the spatial data on the Actionable Species under one subsection and explicitly allow the consideration of data in areas adjacent to Fishing Zones (subsection (d))
- h. Extend consideration of entanglement pattern from only the ongoing calendar year and Fishing Season to prior years and seasons as well while crafting management actions (subsection (d))
- i. Remove Fleet Advisory as a management action (subsection (e))
- j. Add restrictions to the amount of surface gear and mandatory active tending of crab gear as a possible management actions (subsection (e))
- k. Update fishery closure requirements by clarifying that all fishing gear must be removed from a closed Fishing Zone by the effective date of the fishery closure; crabs from delayed or closed zones cannot be taken, possessed, sold, or landed, with special stipulations for crabs taken from these zone(s) right before closure (subsection (e))

### 4. Reporting

- a. Further clarify that all Dungeness crab permit holders, whether they are using traditional or Alternative Gear, must submit the biweekly report when they have gear in any Fishing Zone(s); reports are due on the first and sixteenth of each month, and

may be submitted through a Department provided form in addition to email or text (subsection (g))

- b. Biweekly report now includes the due dates and number of newly lost traps known to each permit holders (subsection (g))
- c. Requiring an end-of-season report due two weeks following the submission of each permit holder's last biweekly report of a Fishing Season documenting the traps lost during that season and their associated buoy tags (subsection (g))
- d. Update requirements for electronic monitoring systems by commercial Dungeness crab vessels when RAMP management measures are in place; monitoring systems must be able to track vessel accurately without interruption; tampering is prohibited, and any interruption must be reported and corrected before fishing can resume (subsection (g))

#### 5. Dungeness crab fishing gear identification

- a. Each main buoy must be legibly marked to identify the fishery and the operator (subsection (h))
- b. Requiring trap line marking to identify the gear belonging to the Dungeness crab fishery (subsection (h))

#### 6. Alternative Gear

Further stipulate the types of limitations or conditions that may be attached to the authorization of an Alternative Gear (subsection (i))

### Benefits of the Proposed Regulations

This proposal clarifies existing RAMP language, particularly those pertaining to Confirmed Entanglements, and improves the program's enforceability. The proposal also promotes compliance with ESA, simplifies the geographic aspect of the program, improves the efficiency and predictability of the risk assessments, improves program flexibility by introducing two new management tools, improves data collection by updating the biweekly reporting requirement, implements new marking requirements to improve information quality and help phase out the use of Unknown Fishing Gear, improves the integrity of the electronic monitoring program, and finally to build out the conditions for Alternative Gear authorization and use.

### Consistency and Compatibility with Existing Regulations

The Legislature has delegated authority to the Department to adopt regulations establishing criteria and protocols to evaluate and respond to risk of marine life entanglement in the commercial Dungeness crab fishery (Section 8276.1 of the Fish and Game Code). The Department has reviewed existing regulations in Title 14, CCR and finds that the proposed regulations are neither inconsistent nor incompatible with existing State regulation. Department staff have searched the CCR and has found that other than Section 132.8, no other State regulations implement measures to reduce marine life entanglement in commercial Dungeness crab fishing gear.